CIRCLING THE EIFFEL TOWER

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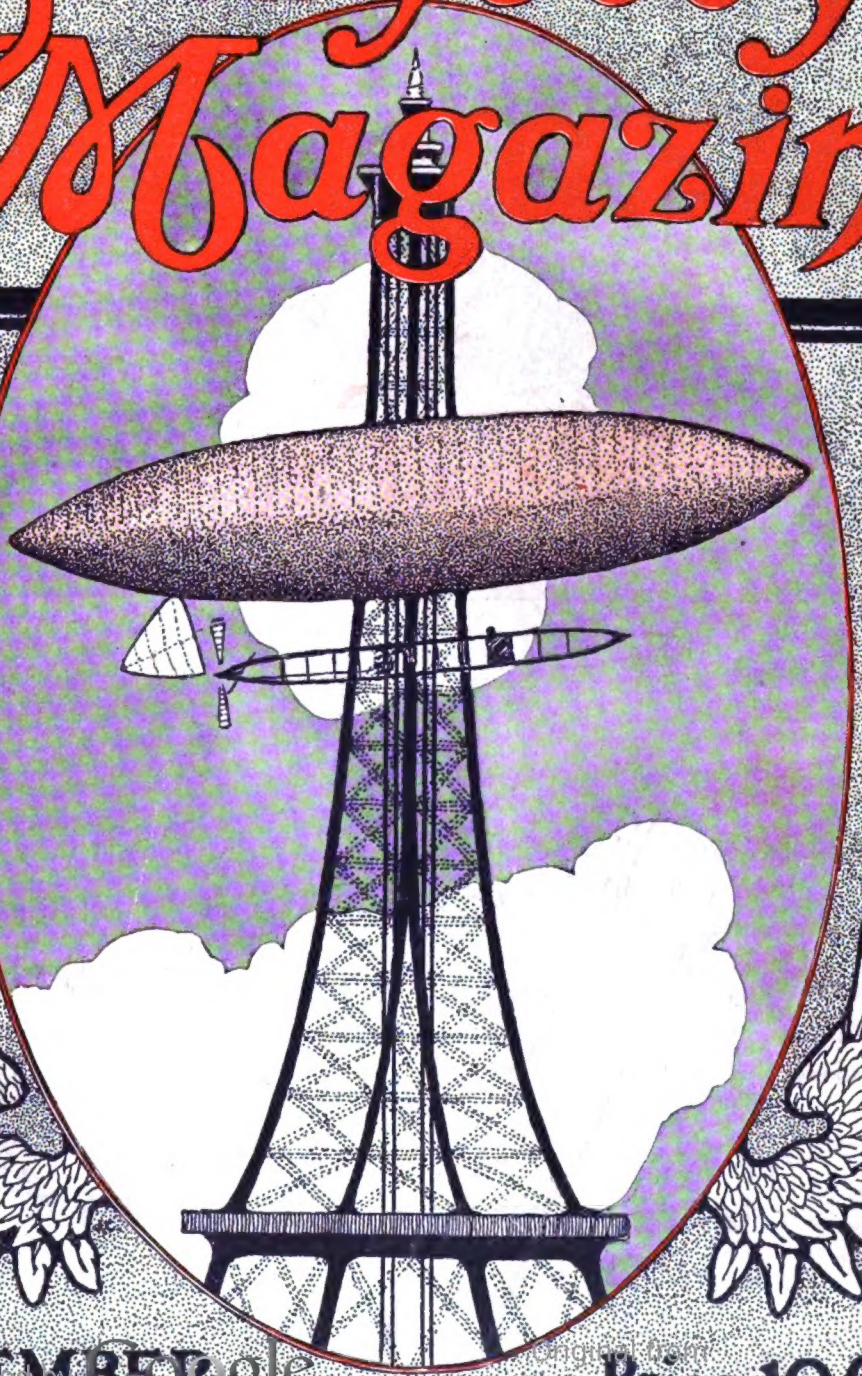
Everybody's Magazine



NOVEMBER Price 10 Cent

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1600-1900

The Puritan maiden of long ago,
Could never have dreamed
what SAPOLIO
Would be doing for women today.

For by dint of hard work
with the SCOURING RUSH,*
Her kitchen utensils would
take on a blush
That would *not* pass for
polish today.

But the vogue of the scouring
rush is no more,
For everything now, from the
tinware to floor,
Is kept bright with

SAPOLIO

E. MORGANS SONS N.Y. SAPOLIO

By using SAPOLIO you also do your scouring 'with a rush,' but in the sense of effecting a great saving of time and of labor.

E. MORGANS SONS N.Y. SAPOLIO

RUBIFOAM
FOR THE
TEETH
25¢
RUBIFOAM not only thoroughly cleanses the teeth, but on account of its antiseptic qualities prevents decay. Deliciously flavored. Put up by
E. W. HOYT & CO., Lowell, Mass.

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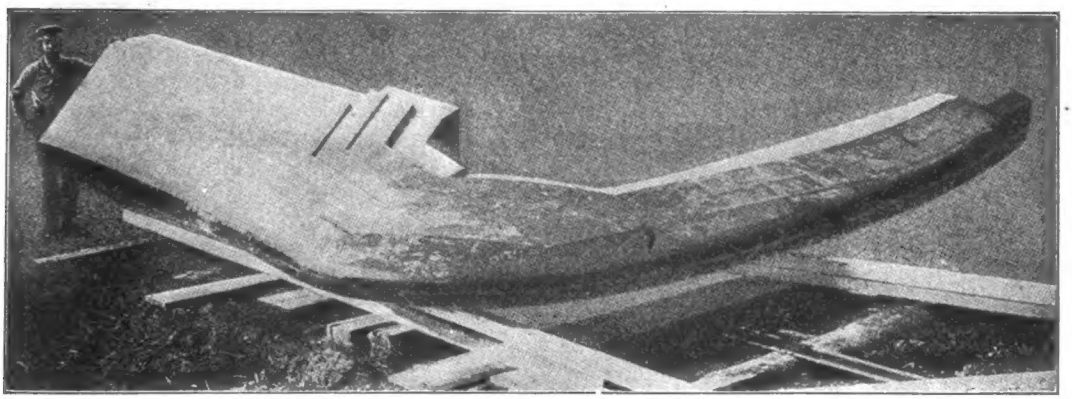


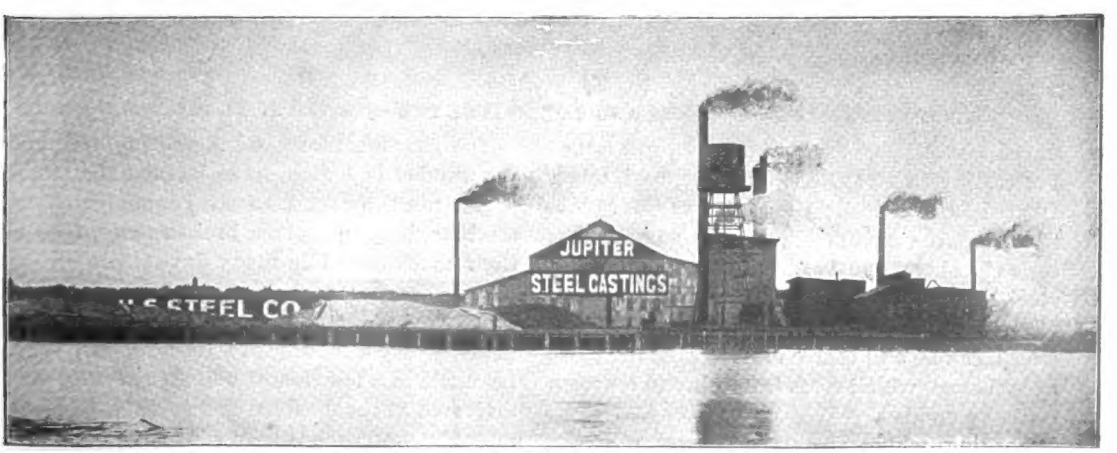
THE FORTY-THREE TON CASTING FOR THE BATTLESHIPS RHODE ISLAND AND NEW JERSEY.

RECLAIMING OF STEEL SCRAP

STEEL is the talisman of modern industrial achievement. It is the one thing necessary in the production of almost every article in modern daily use, whether it be a twenty ton steamship or a lady's watch. Without steel that wonderful bridge in India, 2,260 feet long, spanning a chasm five hundred feet deep, described in the September WORLD'S WORK, could not have been built. No other material could stand the strain put upon it. The new East River bridge, now building in New York, is practically all steel; its tall towers are marvels of grace and lightness, yet they are capable of bearing a stupendous weight. The Brooklyn bridge just a little below it, with its massive stone towers, allows a comparison that is very impressive. The famous old cup winner "America," recently sailed in the New York Yacht Club cruise in company with the stars of the yachting world, "Constitution" and "Columbia," yet the "America" has become merely a curiosity as a racing boat, while the Herreshoff creations are the embodiment of speed afloat. The new cup defenders could not be built if it were not for steel: steel frames, steel spars, steel rigging; their very existence is dependent on this all pervasive material.

It can be truthfully said that the nations producing the greatest amount of steel are to be reckoned as the greatest industrial world powers.

It is the commonly accepted idea that unless steel is forged, hammered into shape, or rolled, it has little more strength than cast iron. The common cast steel is more brittle than the forged product, and cannot be used where it is called upon to bear a great ten-



RIVER FRONT OF THE PLANT AT EVERETT

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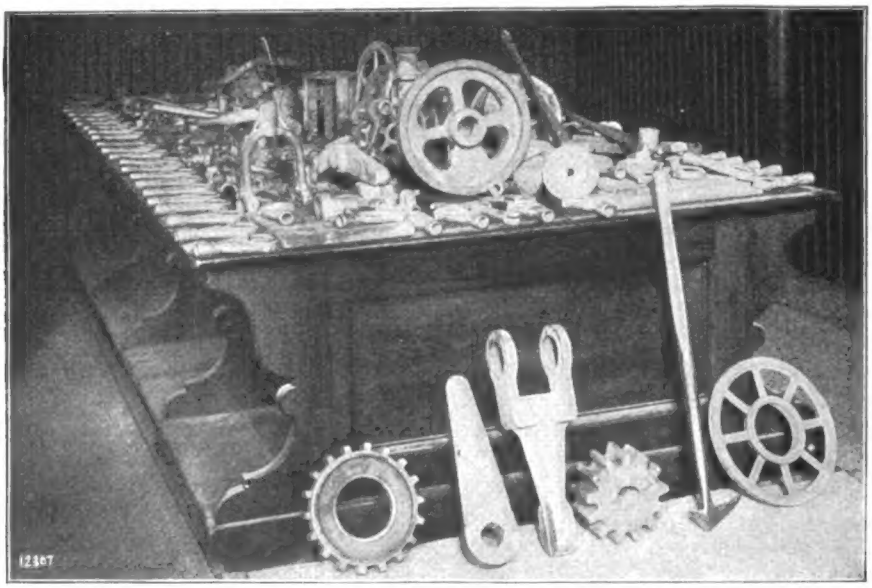
sion. It has remained for H. B. Whall and A B Lundin to discover a method by which scrap or waste steel can be cast and still have all the qualities of the forged product. The United States Steel Company owns all the rights of this new invention and at their plant in Everett, Mass., make "Jupiter Steel," as they call the new product, for an infinite variety of uses.

The United States Government, than whom there is no more exacting customer in this country, if not in the world, will have for its new battleships "Rhode Island" and "New Jersey" steel castings made of Jupiter steel, weighing forty-three tons (86,000 pounds) each. The Fore River Ship and Engine Company have the contract for these new battleships and have already given the order for the immense castings. This is simply an example of the uses to which "Jupiter Steel" is applicable. The same steel which can be produced cheaply enough to be used for a forty-ton casting in a battleship may be used, when treated in practically the same way, for tools requiring a very fine edge; such as a carpenter's chisel, or one hard enough to cut other steel, like a cold chisel. "Jupiter Steel," cheap enough to be used for a two-ton fly wheel, can be and is also used to take the place of tool steel, which costs from nine to fourteen cents a pound

Forging, which is only a shorter word for hammering into shape, requires by the very nature of the process much time and skillful handling to produce a perfect result. In forging the metal squeezed into shape, either by repeated blows of a hammer or through hydraulic pressure. If the former process is used, great pains are taken and much time is lost; if the latter, very expensive dies are necessary to shape the metal while it is in its semi-fluid state.

The molten "Jupiter Steel" is run into a mold, made out of sand by a wooden pattern, and when it has cooled the piece is ready for the finishers.

There is no comparison between the two processes when the trouble and expense are considered; the quality of the two products are the same. Capable of bearing a strain of 73,000 pounds to the inch (Government test), "Jupi te Steel" may be depended upon to stand any stress upon it.



SCRAP STEEL MADE INTO TOOLS AND CASTINGS BY THE "JUPITER STEEL PROCESS."

The manufacturers of New England, and the number is legion, have learned that there is no need to send to far Pennsylvania for steel forgings to replace broken parts, to hold their machinery idle many days while an expensive forging is hammered out. The United States Steel Company's plant is at their very doors, where a casting of "Jupiter Steel" may be made in a few hours at half the cost and delivered at the disabled factory 48 or 36 hours after the pattern has been sent out.

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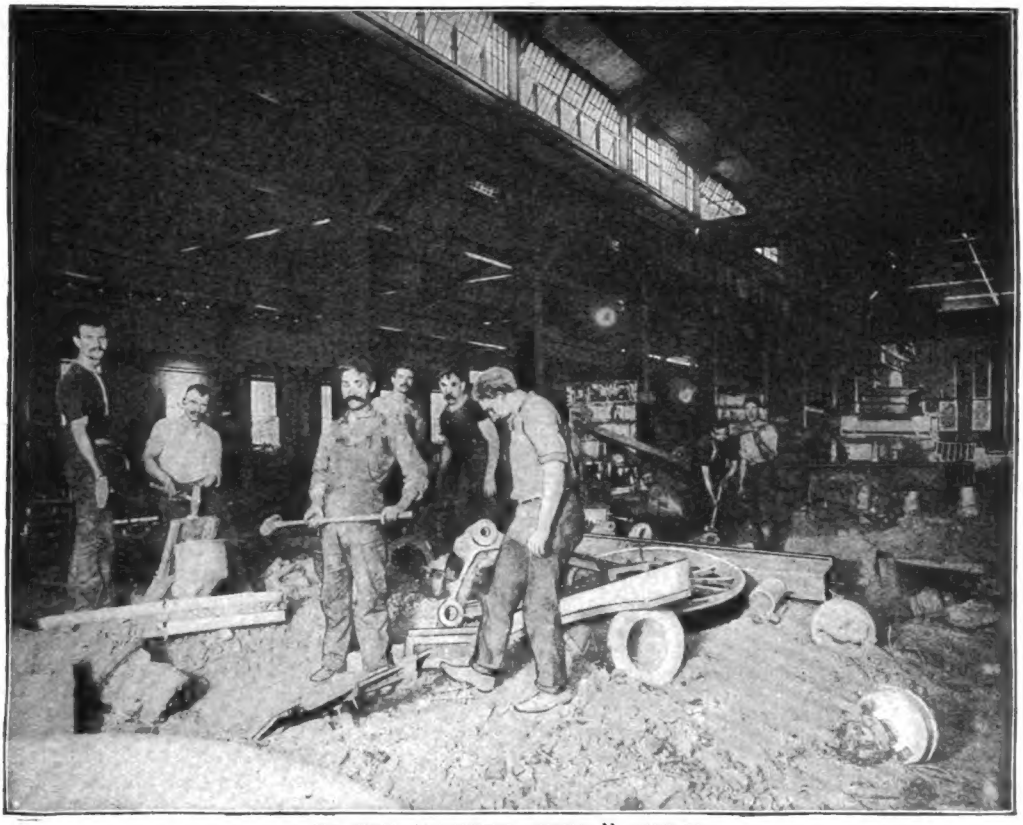

IN THE "JUPITER STEEL" WORKS.
Cleaning some large castings.

Among the seven hundred customers on the United States Steel Company's books the greater majority are New England manufacturers, and the immense advantage of the factory's location within one to six hours' journey of the large consumers of its products will be at once apparent.

"Jupiter Steel" is not made up of absolutely new material, but refines and regenerates, as it were, scrap steel that has outlived its usefulness. By this process of alchemy a worn out boiler plate or a broken fly wheel becomes keen edged axes or swiftly moving steamboat walking beams and begin again an important existence. The manufacturers from whom scrap steel is bought receive it again as tools, shafting and machinery. For the first time supply and demand are brought close together in this respect in New England. So successful has the venture proved that the United States Steel Company have found it necessary to increase their plant fifty per cent. The enlarged plant will enable them to develop the Neal Duplex Brake; a power brake, the patents of which they control absolutely. Applicable to any car, occupying but four inches of axle space and operated entirely by the force generated by the motion of the car, under absolute and immediate control of the motorman but not dependent on his muscular force, the Neal Duplex Brake is sure to be in great demand for use on the modern, heavy, double and quadruple motor electric car.

The power being controlled by and attached to the present brake handle and brake staff, gives him absolute control of the car in one handle, and it can be stopped without jar almost instantly. It is in daily use on the cars of the Boston Elevated Railroad Company, the Brooklyn Rapid Transit Company, the Worcester Consolidated Street Railway Company, the Lynn and Boston Street Railway Company, and the Fitchburg Street Railway Company, and has proved its efficiency and effectiveness. All parts requiring strength are made of "Jupiter Steel." It is evident that there is much profit in an alliance such as this, the patented article for which there is a

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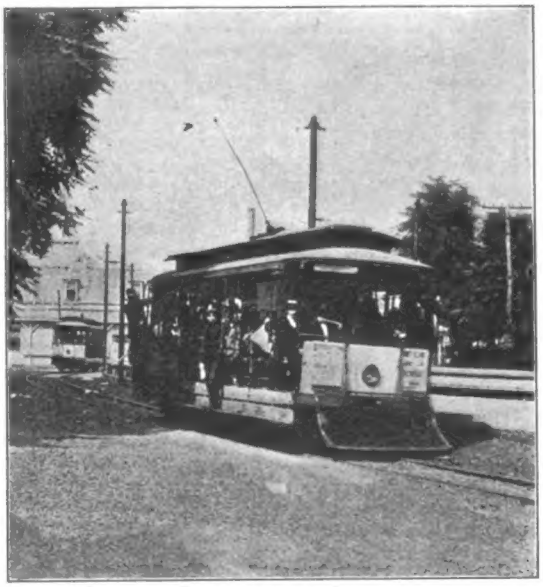
large and increasing demand, controlled by the company that produces the material from which it is made.

One of the chief virtues of the Neal Duplex brake is its absolute reliability in an emergency. The traffic on the Brighton Beach line of the Brooklyn Rapid Transit is terrific. At the point shown in the picture the electric tracks join with those used by the steam road and, according to rule, all cars make a full stop while descending the steep grade until the steam track is clear. A short time ago at this very place a heavily loaded car fitted with the ordinary brake could not be held on the grade and was derailed by a passing steam train. During the daily runs subjected to all the tests of actual service for six weeks on this same section (one of the busiest of the Brooklyn system) the Neal Duplex brake has never failed in the least, the motorman having absolute control at all times.



A BROOKLYN RAPID TRANSIT CAR EQUIPPED WITH THE NEAL DUPLEX BREAK; ON ITS WAY TO BRIGHTON BEACH.

The United States Steel Company was organized in September, 1899, and since December, 1899, it has paid quarterly dividends at the rate of twelve per cent. per annum. Full advantage cannot be taken of the company's opportunities because of limited facilities to handle the rapidly increasing business and to manufacture the Neal Duplex Brake, over which they have absolute control.

Ground has already been broken for an addition to the buildings amounting to fifty per cent. of the present plant.

Since the first of the articles on "Jupiter Steel" was published in May of this year, the business has grown greatly and the plant has been found inadequate in consquence. Investors have subscribed very largely, and the reorders prove that the business men who have bought stock found the venture profitable

The directors have therefore decided to sell a block of treasury stock at its par value of five dollars per share to provide the working capital for the manufacture of the brakes and increase the casting output of the present plant. In this connection it should be stated that the company has paid quarterly dividends at the rate of twelve per cent. per annum on its stock since December, 1899. With the facilities provided for the manufacture of the Duplex brakes these dividends can be increased. The company's stock capitalization is 600,000 shares of a par value of five dollars per share. It is interesting to note the significance of stock purchases, for they nearly always have been in quantity in direct ratio to the knowledge acquired by the purchaser of the company's affairs. An investor who will write about the purchase of twenty or thirty shares will buy two or three hundred shares after an inspection of the company's plant, its patents and its growing business.

At Everett the company own seventy-four acres of land, having both rail and water facilities. On this land a modern plant, 200 x 130 feet, has been built, provided with electric cranes, furnaces, drying ovens, gas producers, boilers, engines, dynamos, sand blast, crucible plant, finishing machines, offices, etc.

A cordial invitation to inspect the plant at Everett is extended to all who are looking for a safe and legitimate investment. Those who cannot do this will have any information desired sent to them promptly upon application to the Boston office of the United States Steel Company, 159 Oliver street, Boston. The United States Steel Company organized in September, 1899, has no connection with the United States Steel Corporation, which was incorporated in February, 1901.

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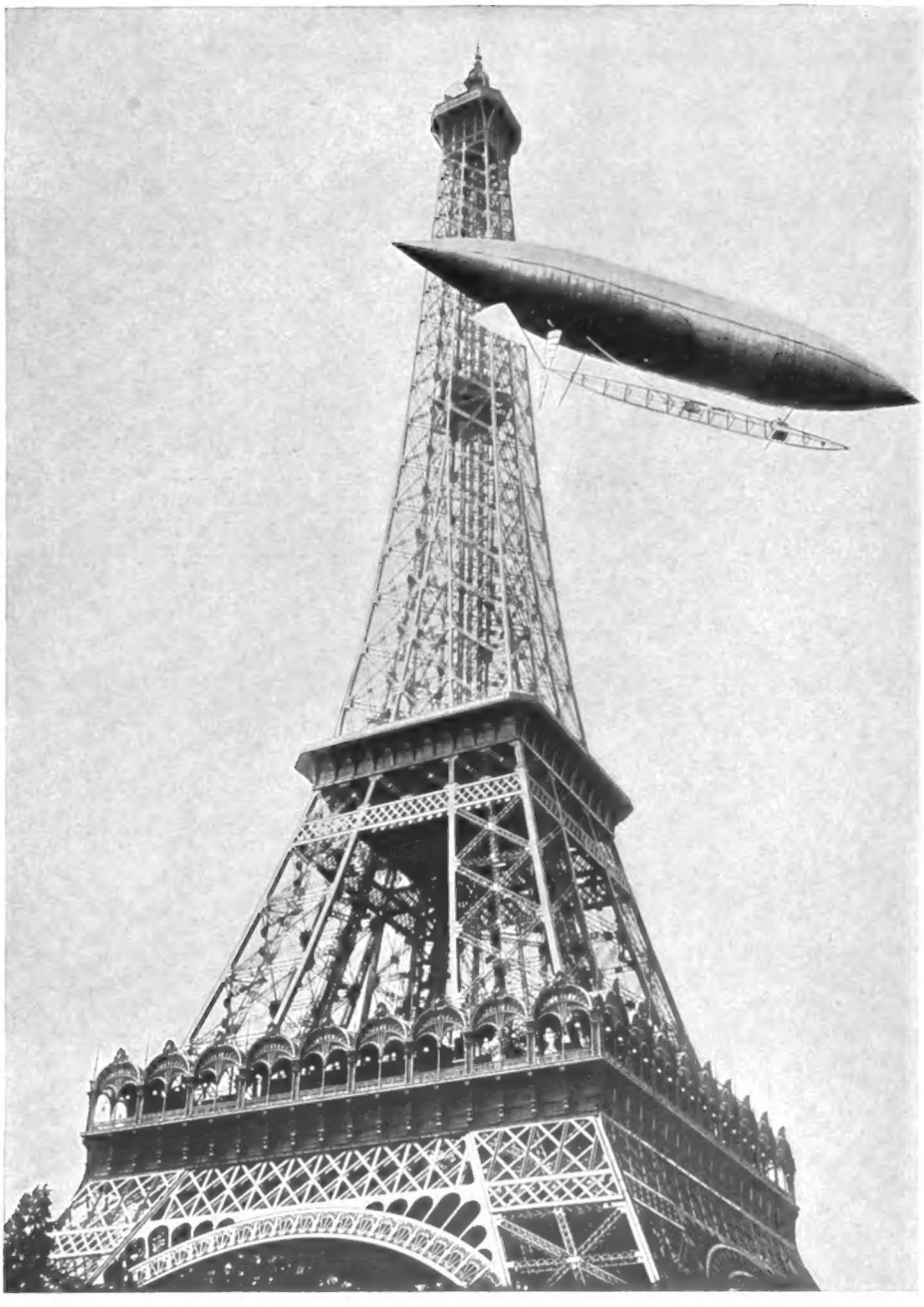

THE AIR-SHIP "SANTOS-DUMONT V." CIRCLING THE EIFFEL TOWER.

"Bringing together man's two ways of getting into the air, the one from a century just closed, the other from a century just beginning."

[*The balloon was really no higher than the second platform; but the camera, pointed upward, made it appear to be near the top.*]

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EVERYBODY'S MAGAZINE

VOL. V. NOVEMBER, 1901. No. 27.

PANORAMA OF ANGEL'S, CALIFORNIA.

In the distance, toward the right, may be seen the main hoist of the Utica and Chlorination Gold Mines.

THE EXTRAORDINARY STORY OF THE UTICA MINE.

How John Selkirk sold the Richest Mine in California for Fifty Dollars—Abandoned by the Purchasers—Taken up by James G. Fair and abandoned again—Seven Million Dollars taken from it by Lane and Hayward—Dramatic Incidents of the Mine's History.

BY BAILEY MILLARD.

SICK from overwork on a worthless quartz claim in the foothills of the Sierras, and with a nostalgic ache in his heart, John Selkirk rode his tired mule into Angel's Camp. It was that same Angel's of which Bret Harte has romanced and sung, but it knew not of any romancer or singer in those days of delving and eager seeking after gold. The story was yet to be written, the song was yet to be sung.

John Selkirk came in the dry summer of 1854, when men who had made their way to California to dig for gold were scratching all over Calaveras County, eagerly prospecting for the yellow metal. They were burrowing in the red earth like gophers; they were changing the courses of streams and washing out their old beds; they were shovelling gravel like mad, and rocking and sluicing and overhauling the face of nature generally. Some worked to much purpose and were getting rich, and others were merely making a good living; but for John Selkirk there had been nothing but the buffets of fortune and none of her rewards. Indeed, his lust for gold had nearly burned itself out. He was weary of soul and would have been glad that day if his mule had borne him to his old Massachusetts home instead of setting him down at Angel's.

Silently John Selkirk rode through the slovenly little camp without a word to anybody and with barely a look to right or left. Coming to a bushy place on a hillside a little way beyond the last shanty, he stopped and tied his mule to a scrub oak. He unpacked his blankets, his pick, shovel, and pan from the back of his saddle, and carelessly threw them down on the earth. Then he built a fire, put his coffee upon it to boil, and pre-

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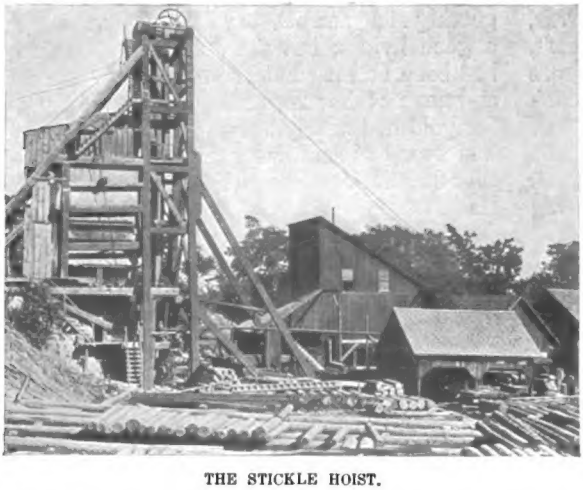
THE CROSS HOISTING WORKS.

pared a scrappy dinner of which he ate only a small part. He lay idly about on the ground for a while after dinner, smoking his pipe and thinking of home.

"I've had enough of this California country," he said to himself. "I'll light out of here in a few hours and go back to the folks."

A noisy jay interrupted his meditations, yelling at him scoldingly from the brush. The harsh sound disturbed him and, without getting up, he irritably looked about for something to throw at the bird. With his eyes upon the ground and his beard sweeping over it, he paused suddenly in his search and picked up a small gray stone. He was raising it to fling at the jay, when of a sudden his eye caught in the grain of the stone the glint of yellow gold. He broke the little piece of quartz into fragments with the back of his hand-axe. The pieces were heavy with gold. Then he began eagerly to search about for more outcroppings. At the base of a small mass of rocks he made a good-sized prospect hole and found rich and still richer specimens. It "looked right," he said, and he was satisfied with the prospect. So he cut some sticks from

THE CHLORINATION WORKS.



THE STICKLE HOIST.

The logs are ready to use for supporting the "stopes" or excavations.

the oak tree, and driving them into the earth at four corners of a rectangular piece of hillside containing fifteen or twenty acres, he staked the great Utica Mine, the richest known gold deposit in California.

John Selkirk worked hard for the next few months. The ceaseless toil, day after day, with pick and drill took all the spring out of the man. He found little gold near the surface, but on going deeper he came upon a rich ledge, some of the rock containing two hundred dollars in gold to the ton. But Selkirk, with his crude arrastra, worked by mule power, and his other primitive methods for crushing the hard rock and extracting

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the gold from it, stored up very few yellow bars, and in time these all went for high-priced necessities. He knew there was gold enough in the ground he had staked to buy him a ship to sail home in and to freight it with treasure, but how to wrest the riches from the hard, unyielding rock? That was the problem.

He went to Sacramento and to Benicia and laid his case before men of wealth.

"You can make a heap of money by going in with me," he said to them, "and I can make money, too, but I must have help. It is a good mine, wonderfully rich. Look at these specimens."

But wise Mammon smiled incredulously. As if John Selkirk were the only man with a hole in the ground into which good money could be sunk! As if John Selkirk's piece of glittering quartz selected from the richest pocket in the mine, or, perhaps, from another hole a hundred miles from it, bore any significance! There had been others with mines and specimens of ore—hundreds of mines and thousands of specimens. To Mammon the prospect was not alluring. It wished him well of his mine, but would none of it.

Back again to Angel's, and back again to another month of wearying, wearing work. Then John Selkirk became more homesick and more heartsick than ever. A prospecting party came along, looked down into the hole and saw the dirty, sweat-stained miner wearily pecking away at the hard rock.

THE SIXTY-STAMP UTICA HOIST AND MILL.

"What have you got down there?" asked one of the new-comers.

"Biggest thing in the world," said Selkirk, coming up the ladder and sitting down to rest and talk in the bright sunshine.

"Want to sell?" asked one of the party.

"Yes, I *would* sell, if I could get my price."

"What is your price?"

John Selkirk's eye ran up the slope to a far-away smoke-hazed butte. He looked that way for a minute, and then said:

"I'll tell you, I'm sick and worn out, and

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CARS OF ORE FROM THE GOLD CLIFF MINE.

if you'll give me two hundred dollars to get home on I'll let you have it."

The men went down in the mine and looked about by the light of Selkirk's candle. They broke some of the ore, but did not like the look of it.

"We'll give you fifty dollars," said the spokesman. "It don't look like much, does it, Jim?"

"No," said Jim. "Fifty's a big price."

"All right," said Selkirk, very wearily, "I'll take it."

"And throw in the mule?"

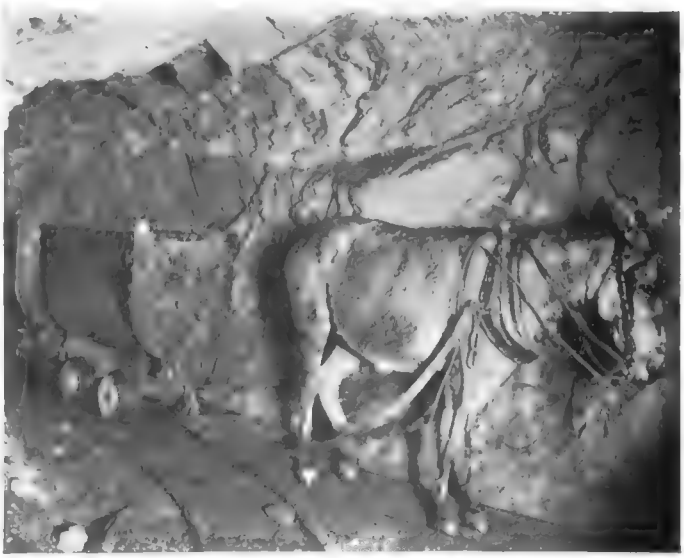
"No, siree; I need him to get down to the river on."

The price was paid, and so for a mean little fifty dollars the great Utica Mine was sold by its original discoverer, who, had he stuck to it, might have made the name of Selkirk as mighty in the money marts of California as that of Mackay or of Huntington or of Stanford.

But the men who bought the mine did not know what they were buying. They never had the discerning power of John Selkirk, who knew when he gave it up that he was giving away millions. They opened the vein more freely and set up a twenty-stamp mill. But they were not thrifty men and did not know all there was to know about quartz mining. Then, too, they were almost as poor as John Selkirk.

When they received their bullion from the smelter, there were many ways for it to go, and what they divided among them after the monthly debts were paid was not much. One by one the mine workers of the Selkirk claim became disgusted and left the camp to look for better properties. The last man took a contemptuous look into the shaft one day, found that it was half full of water, and in a fit of disgust packed up his little kit and left the place.

So again the great mine, with all its wonderful store of wealth, was abandoned. Weeds grew up in the track of the old ore-cars, the twenty-stamp mill was dismantled,



AN ORE TRAIN IN THE MINE.

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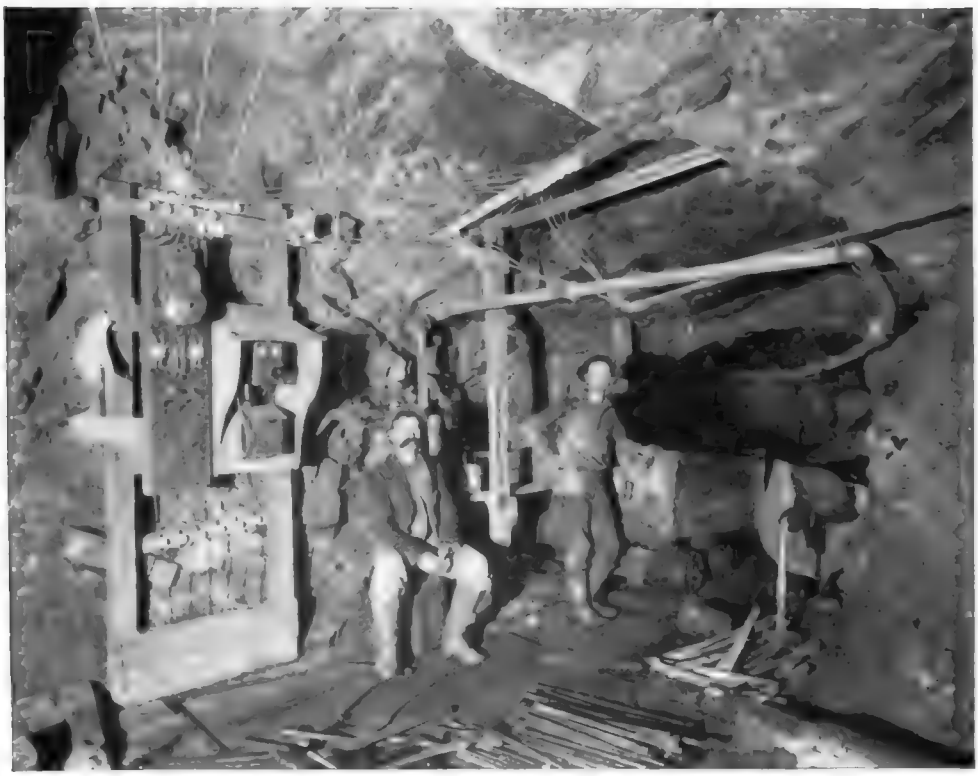

A STATION IN THE UTICA MINE.

being carried off piecemeal by the miners of the neighborhood, some of whom were taking much yellow gold from the ground. In fact, Angel's had come to be regarded as one of the best camps in California. From the time that Henry Angel and James H. Carson found gold there in 1848 it had been esteemed a "good camp." The Winter brothers in 1852 had washed out nine thousand dollars from a piece of ground only two hundred feet square, and in sinking had discovered a ledge yielding two hundred dollars to the ton. But for a few years nothing wonderful had been heard from Angel's. Now, however, stories were being told of rich quartz strikes and marvellous pay ore. The stories reached Sacramento, and a young man full of plans for money-getting, and full of that certain shrewdness which begets money, heard them. This man was James G. Fair, who at that time had a few thousand dollars, all he possessed, in one little sack of dirty "town dust," which did not represent in value more than three-fourths the same amount in good, clean, honest dust from the mines, being adulterated with black sand as it passed from trader to trader.

Young Fair took the stage for Angel's. With a trusted guide he looked all over the camp, and at last he came to Selkirk's hole-in-the-ground.

"What's down in there?" he asked, peering into the old shaft.

"Nothing but water," said the trusted guide. "There's a good property back on the hill there that I want to show you."

"But I'm going to see this first," said Fair. Pulling off his coat and taking a candle in his hand, he prepared to descend the ladder.

"Look out, Fair! It's old and rotten," said the trusted guide, referring to the ladder.

But Fair was half-way down the shaft and into a drift to which the water had not reached. He held his candle on this side and on that, and sniffed about for the dangerous drift damp which is known to lurk in old mines. He picked up several pieces of straggling quartz that had been chipped off by the last workers in the mine,

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DESCENDING THE SHAFT.

and came out with these to the shaft and up the rickety ladder into the sunlight. A few curious idlers had gathered about the mouth of the shaft. What could anybody want down in Selkirk's old hole? Fair looked sharply at the quartz bits. Some he threw away; others he cracked between hard rocks, while the idlers looked on and shrugged their shoulders and smiled. Fair liked the looks of the quartz, but he said nothing. Trust James Fair for keeping his shrewd money-mouth shut when he was examining a mine in which he had suddenly become interested. Yet it was noted that while he gazed intently at one of the richest specimens, his eye, squinting half-shut in

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the sharp sunlight, glittered like a crumb of broken glass.

Soon afterward an expert miner went carefully through the drifts of the old Selkirk mine, and a few weeks later a skip was at work bailing out the stagnant liquid from the hole.

"Somebody's working the old Selkirk mine," they said in a camp gathering.

"Well, he can work all right enough," was the response, "but he'll be good salt pork before he ever makes it pay."

But they did not know James G. Fair. He was satisfied with the assays of the quartz, and he was prepared to spend the last grain of the dirty "town dust" in his sack in a vigorous prosecution of the work of developing the mine, which he called the Utica. He set up a mill, put men at work underground to delve and drift along the vein, and put men at work above ground, cutting and hauling timber to hold up the walls of shaft and stope; and by working on a scale of which poor John Selkirk had dreamed, but could never realize for himself, Fair saw a goodly stream of gold beginning to pour out of the mine—gold enough, indeed, to pay and feed all hands, keep the machinery in repair, and see a neat surplus coming in every month.

But though the gold flowed into Fair's coffers from the Utica, there were seasons of much discouragement. Fair found that the gold-bearing quartz vein was nearly vertical, with a slight variation toward the east. In places the ground was loose, shifty, and dangerous to dig in. Then, again, quartz would be found of an adamantine nature. The deposit, being thus complicated, often presented difficult problems, particularly when on penetrating the earth it was found to vary from the solid rock to that of a schistose character. The ground was not easy to timber, and the walls of the stopes had to be well and carefully supported. It was also necessary that the ground should be thoroughly prospected as the work proceeded.

MINERS COMING OFF THE SHIFT OF THE UTICA MINE.

THE MAN AT THE HOIST.

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Fair knew that the Utica was a mine of magnificent prospects, but he also knew that it was baffling, rebellious, and expensive. His few thousands had brought him in many thousands, but he was not satisfied. This process of gaining great wealth was too slow. He heard of the riches of the Comstock ledge, which were reported to be greater than "all Bokhara's vaunted gold," and he went to visit the place which had begun to attract men of money. There were those who scoffed incredulously, but he did not listen to them. He liked the lay of the land on the Comstock, and the prospect seemed to him a very inviting one. If men wanted to dig and delve in the too-hard and too-soft earth at Angel's Camp, let them do it. He would pin his faith to the Comstock.

LEDGE OVERHEAD IN "UPRAISE" OF THE UTICA MINE. DISCOVERING THE VEINS OF GOLD.

So, with the gold he had taken from the Utica, Fair bought mines in the richest centres of the great Comstock ledge. He prospered with dazzling quickness. Soon he joined with Flood, Mackay, and O'Brien, and in the Hale and Norcross mine these four men made their first million. Within a short time this was doubled and trebled. Fair bought more mines, and more riches became his. He left the slow old Utica to take care of itself, and went on amassing wealth until he had gained an enormous estate—an estate famous in his own day, and more famous since his death and the desperate fight made over it by his heirs in court.

When James G. Fair abandoned the Utica, the mill he built was dismantled, and the timbering in the shaft and stopes, as well as the buildings and the plant generally, were left to the mercy of marauders and the unkindly elements. Here it was, ready to make any man's fortune, but nobody wanted it. Everybody knew it was a hard nut to crack. Above ground and below, the Utica presented the appearance of a picturesque ruin when, in 1880, Charles D. Lane bought it for $10,000. Lane was warned against making the purchase.

"Nobody can make anything out of a mine that Jim Fair has abandoned," they said to him.

"Fair is a shrewd man," replied Lane, "and he rarely lets go of a thing that has any money in it; but I'm going to begin where he left off, and see what I can do."

Lane's friends solemnly assured each other that he was going crazy.

"It's a fool's scheme," they said. "The mine is nothing but a prospect, with three or four hundred feet of development work. Any man must be a lunatic who would try to work that rock."

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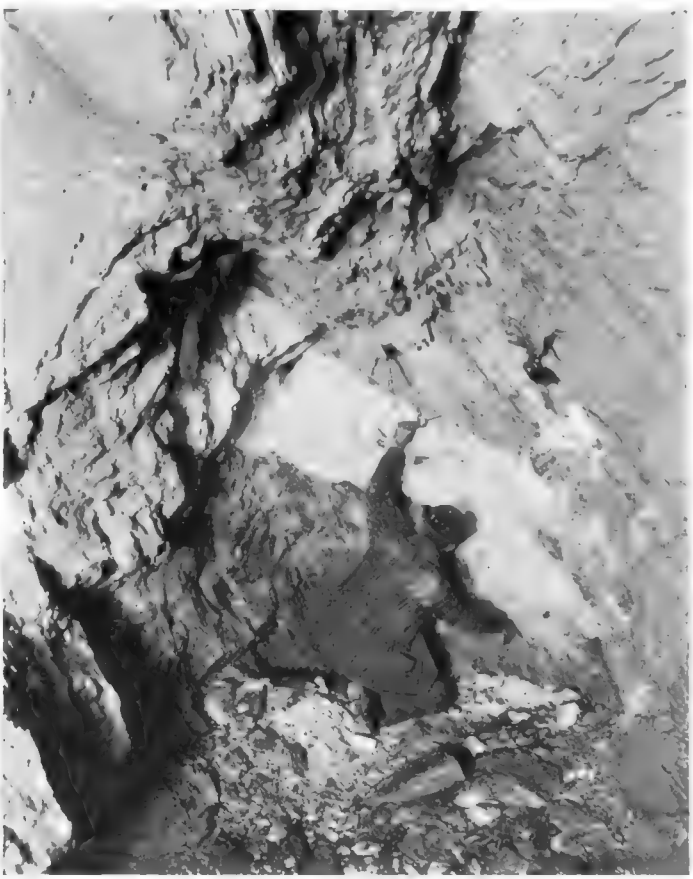
Lane had very little money, but he had some ideas. Whether he derived these from a real knowledge of mining affairs or whether he got them from the spirit-world it is hard to say. There is a Mrs. Robinson, a spirit medium in San Francisco, who stoutly avers that it was she who told Lane of the real worth of the Utica. This esoteric adept declares that she can take a piece of quartz in her hand, and that, without removing the paper or cloth in which it is wrapped, she can tell all there is worth knowing about it. She says that Lane was boarding at her house at the time he was examining the Utica prospect.

"A man named Hunt had a bond on the Utica," says Mrs. Robinson, "but he failed to make the mine pay. Mr. Lane, who had been looking into it, brought a piece of rock from the prospect and put it into my hands. 'That is your fortune,' I said, holding up the rock. 'There isn't any doubt about it. Stick to that mine, and you'll be a millionaire.'"



MEASURING A LEDGE IN FACE OF DRIFT.

Lane was not convinced, but secretly sent quartz specimens to the medium by different persons. In every case the spirits declared the mine to be rich, and so finally Lane set to work to raise money to buy the Utica. The money was gathered together at last, and, despite his wife's declaration that no good would come of it, Lane became the owner of the mine.

He worked hard year after year in the big burrow, and his wife had plenty of opportunity for "I-told-you-so's." Still he persevered. He took out some gold, but the rich ore was not yet in sight. Lane had a sort of bulldog pertinacity which stood him in good stead in his attempt to develop the Utica, which he persisted in, though he exhausted every dollar of his own resources and was about fifteen thousand dollars in debt. His credit was entirely exhausted, and he was considered a mild sort of mining crank. Those who knew him were not surprised at the way he stuck to what seemed a hopeless enterprise. He was a hardy specimen of vigorous manhood, and remains so today, in his sixty-fifth year—tall, rawboned, and fit to fight his way anywhere. He could "stay with his work" until other men had dropped from exhaustion. In those fighting days there was not an ounce of superfluous flesh on him. He could then, and he can now, undergo much privation and hardship, and issue forth from each succeeding ordeal none the worse for wear. He can remain in wet clothes and

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STARTING A RAISE.

"The miners working straight up through the roof to the surface, many hundreds of feet."

rubber boots all day. He can tramp across the roughest Alaskan country and smile at fatigue.

But while he was such a giant for endurance, he was easy with the men of the mine, and was to them, as he is to all who know him now, a congenial companion and all-round "good fellow."

"You had better give it up, Charley," said Mrs. Lane to her husband, when, deep in debt and all his credit gone, the plucky miner looked desperately about for assistance.

"Not yet," was the quiet reply. "There's gold there, and I'm going to have it." And the resolute man kept pegging away, determined to win the vast deposits of rich metal which the spirits had promised he should get out of the mine.

It was at this low tide of the Lane fortune that a gaunt, shambling figure appeared in Angel's. The figure was conspicuous because it was one of the few ever seen there topped by a stiff silk hat. From under the brim of the hat peered the sharp eyes of Alvinza Hayward, one of the shrewdest of the old-time mining men of the Coast. Hayward had a little money, and Lane, hearing he was in town, determined to interest him in the Utica. The newcomer examined the prospect. He did not like the look of it, and would not accept Lane's assurance that the spirits had promised him much gold would be found there. Hayward was also a confirmed believer in the power of spirit mediums; they had already told him of the location of other good mining properties; but he could not accept the story of a layman, no matter how great that layman's faith.

"Well, go and have the rock read yourself," said Lane. "You'll find that it's all right."

"I'll see about it," said the noncommittal Hayward. He took a few

AT WORK IN "STOPES."

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samples of the quartz to San Francisco, and it was a good while before Lane heard from him again. Even then he did not know, of course, what Hayward's medium had reported. Lane and Hayward dickered over an arrangement for joining forces in the Utica. Lane wanted Hayward to advance him money enough to pay his debts and enable him to prosecute the work. Thirty thousand dollars would do it. But Hayward could not raise so much capital. He induced a man named W. S. Hobart, who had some money, to join him, and an arrangement was finally made by which Lane surrendered to the two other men two-thirds of the Utica property, and retained one-third himself, the mine remaining under his superintendence.

"My medium told me just what yours did about that rock," said Hayward to Lane.

"I knew she did," said Lane. "You wouldn't have come in if she hadn't. It's a big thing. Now we'll go to work in earnest."

Lane paid his debts, increased the working force, and within a few months the report went ringing through Angel's and all over the Coast that a large body of rich ore had been struck in the Utica Mine. The report was true. The spirits had "read the rock" aright. Here were millions of gold right at hand for the mere digging.

"What did I tell you?" asked Lane of his wife. "Didn't I say you'd be wearing diamonds? Those spirits never lie."

"SPITTING" THE FUSE.

He and his partners grimly exulted over their new fortunes. But they were quiet men. There was no wild hurrah, no violent conviviality. They kept at their work.

And now there was a great stir at Angel's. Hundreds of men were set to work at the Utica. Stamp mills of the most improved design were erected, as well as reduction works and metal-saving machinery for working the tailings and getting the last response from Mother Earth that she could be made to give in gold.

It was determined to follow the almost vertical vein by probing straight down into the ground to any depth that might be necessary to reach and bring up the richest quartz. A shaft four by eight feet with two compartments was sunk. The cost of this was considerable, being at the rate of seventeen dollars a foot, and only two feet a day could be excavated. The same harsh and baffling conditions were encountered as those which had resisted Selkirk and Fair, but no efforts were spared in preparing to wrest the gold from the bowels of the earth.

It was Homeric labor. Far in the forest an army of men were cutting down yellow pines, and more men were loading them upon wagons hauled by long teams to the

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mine. Other men were sawing and hewing the great timbers, and were lowering them by cables down deep into the earth, and still others were setting them up and bolting them fast to keep the treacherous walls from breaking down and destroying the miners who were plying their drills and moving mountains of rock to be hoisted aloft by great engines, and to be crushed by other engines, and washed and sifted and strained in the gathering of the golden specks for which men give their best blood.

But thick and strong as were the timbers bracing the walls of the shaft and stopes, there were times when they were not strong enough. There would come a warning rumble, when the men would flee, and a mighty crash would resound through the deeps, and the stout timbers would be splintered and broken into bits.

A tremendous cave occurred in the summer of 1888, when a great section of the timbering was destroyed. The cave reached to the surface, and shows to-day in a great depression in the ground near the hoisting works.

It was found necessary to use heavier and still heavier timbers, and in the end, as simple timbering was found ineffective, a system known as timbering and storming was adopted, and is now used throughout the mine.

AIR-DRILLING FACE OF DRIFT.

A MINER. CHARACTER SKETCH.

Four shafts have been sunk in the ledge, the deepest being nearly two thousand feet. One of these has been almost entirely retimbered twice with pine and oak, involving much expense and much loss of time in mining. In order to construct speedily a new shaft, not only was the work begun at the top, but a level was run over from the first Utica shaft at its bottom, and a "raise" started, the miners working straight up through the roof to the surface, many hundreds of feet, while the rocks they blasted and the earth they shovelled fell down through the man-way of their platform into what they called the "bull-pen," and were hauled to the Utica shaft and there hoisted and dumped. This was exceedingly hazardous work—first, because of the constant danger of caving; and, secondly, because the gas caused by the blasts would nearly smother the men. Sometimes it would be three hours before the air would clear so that the miners could return to their drilling. This work, as well as nearly all that done in the mine, and particularly the timbering, has been very expensive.

So that while the present owners have tamed the rebellious Utica, and made it the great gold-bearing power that it is, it has

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cost them millions to do it. But the returns have been colossal.

And now Bret Harte's Angel's was in a fair way to forget itself and its old traditions. The opening of the rich quartz deposit was a great thing for the quiet, sleepy little town. It changed its rough aspect completely.

To-day only a trace of the frontier mining town remains in its precincts. It is a pretty town—typical of a hundred places in California—and no more. The bones of Abner Dean perhaps lie mouldering somewhere on the hillside, but his spirit doubtless regrets the old, wild days as it hovers above the rugged cañons. There is one main street in Angel's now, and the people are very proper indeed. The town wears an appearance of prosperity. The residence portion radiates from the one business street out into a rolling country, with the typical characteristics of the central part of California in the foothills of the Sierras. It is now the supply centre of a large mining section.

MINERS AT WORK CROSS-CUTTING FROM A STATION.

As the three partners proceeded with their labors, their company absorbed other mining properties adjacent to the Utica, chief of these being the Stickles, which had been fairly developed.

Through seasons of non-productiveness, when new shafts were being made, or when, because of accident, the works of the mine have been shut down, the owners have had their faith in the Utica severely tested, but they have believed in it from the first of their labors there, and their faith has been greatly rewarded. They are said to have taken from the shafts of their great mine over seven million dollars in gold. As much as nine hundred thousand dollars' worth of bullion has been secured in a single month.

The Utica is the greatest gold mine on the Pacific Coast, one of the wonders of wonderful California. It is a place of potent fascination to the traveller, and it well repays a student of mining to make careful observation of the methods pursued in taking out and treating the quartz. Indeed, so perfect are the appliances, and so educational the study of them, that the philanthropic owners have founded and fostered at the Utica what is known as the "Gold-Mining Kindergarten," composed chiefly of students of the State University at

IN THE "STOPES."

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Berkeley. In this school practical mining is learned by a class of young men who advance far more rapidly than those who take a merely theoretical course. This is conceded to be of great benefit to the State, where mining development, no doubt, will be going on for centuries to come.

"The Utica runs Angel's," is the saying there, and, in turn, Angel's runs the Utica, for there is where the real masters of the mine, the men of brawn who delve in its deeps and darks, reside. They have braved its terrors of caving earth, its foul damps, its roaring blasts, and the subterranean sea of flames that has run through the drifts and shafts, demons of the underland, seeking out men to destroy them.

It was these dauntless men who, under their brave leader, Superintendent Tom Lane, fought the big fire of July, 1895. Each year they had been putting twelve thousand great forest trees into the mine, and the element which destroys dead wood had always been ready to consume the miles of dry timbering. Nobody knows how the fire began.

"Put up a bulkhead here!" shouted Lane.

The men, half-blinded by the smoke and choking with the fumes, set to work. They piled high a breastwork of timbers and stones to keep the flames within bounds, and smother them, if possible. But hardly had the bulkhead been built before there was a tremendous explosion, and the whole mass of which it was composed was blown back, the fragments scattering far. Luckily, none of the brave workers were killed, though many were nearly suffocated, and required medical assistance at once. Other bulkheads were built, but the gas formed behind each of them, and they were blown away as it ignited from the flames. Explosion after explosion could be heard inside the mine, and there was a rattling of stones and a crashing of earth as the timbers gave way.

"Well," said Lane, "there's only one thing to be done now—fill her up with water. Start the engines there! Get your monitors to work!"

This flooding of the great mine meant the loss of hundreds of thousands of dollars and a long delay. Ninety hours there were from the time the big monitors began to discharge their great streams into the mine to the time when the last blazing stick of pine was submerged.

Then began the work of hoisting the water out of the mine. Night and day for eight weeks the great skips and pumps, regular and extra—all that could be set to work—were kept constantly employed. When the water was lowered sufficiently, the miners went back to their damp stations, and soon the drills were clanking again.

And what has been done with the gold taken from the great mine?

Hayward has used his money to make money, and certainly the influence of his share of the Utica gold has been widely felt. Under the advice of the spirits he has invested in various other mines, nearly all of which have been productive. He has bought large areas of land in California, and buildings and lots. He owns one of the tallest skyscrapers in San Francisco, a great store and office building, erected at the behest of his spiritual guides. He has a large villa tract in San Mateo. Here in a fine mansion, surrounded by beautiful, well-kept grounds, a deer park, and ample conservatories, he lives and enjoys life in a quiet way. He is a man of power and hard to combat in a financial fight, as the men who fought him in an Alameda County water-supply contest found to their sorrow. He was bound to dictate in the matter of the control and distribution of water for the city of Oakland and the neighboring towns

DUMPING THE WASTE.

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CLEAN-UP OF MILL.

Some of the stamps of the Utica Mine may be seen beneath the letters "A," "B."

on the east side of the Bay of San Francisco. Here Utica gold played a potent part, and Utica gold and native shrewdness, backed by the advice of who shall say how many spirits, won the day, and bred more gold for the hardy Hayward.

The good people of San Mateo have had a taste of his fighting power. They wanted to incorporate their town, and fixed limits to include Hayward's home acres; but incorporation would mean more taxes, and Hayward refused to be incorporated. The good people laughed at him. They said one man could do little against a whole town, but one man did a good deal—enough, in fact, to make the map of San Mateo town look like a congressional district in Ohio, all one-sided, elongated, crescented, with the Hayward acres left out.

Alvinza Hayward is a man of medium height. His hair is almost white, and he wears a close-cropped Vandyke beard. He is never seen without a high silk hat. This is the only head-gear that he ever wears. This hat has a peculiar sort of flat brim. He wears a dark suit, generally with a frock coat. He has very few friends whom he admits to any degree of intimacy, for he is very self-contained, and does not wear his heart upon his sleeve. He is, however, in a quiet way an exceedingly charitable man, and those who think he loves money for its own sake make a great mistake.

It is difficult to differentiate between Lane and Hayward when it comes to their belief in spirits. Undoubtedly it is the truth to say that they are both devout believers. To them the occult as a governing force is as important as the rise and fall of the markets, and as real. It enters into all their daily calculations. They are both reverent believers in spiritualism, and the arguments for their faith, which they will sometimes advance to their friends, are many and often convincing.

Hobart, the man whom Hayward induced to join him in the Utica enterprise, did not live to enjoy his share of the gold. He

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died in 1893, leaving an enormous estate. His interest in the Utica is now owned by his son, Walter S. Hobart.

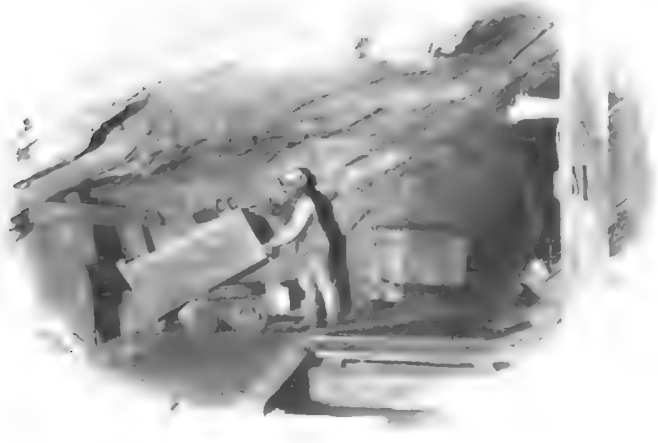
As for Lane, who struggled so long to develop the Utica, and who has had his share of the gold, his investments at home and far afield have prospered exceedingly. He has not gone in for town lots or country lands. With him it has been mines, mines, mines. Utica gold, under spiritual guidance, was directed to La Fortuna Mine, in Arizona. This is one of the great bonanzas of the Pacific Coast, and from its veins were taken the largest pockets of high-grade ore ever dug from the depths of any American mine. A large number of stamps are pounding there at present, and the prospect for future wealth is said to be very great.

In 1896 Lane subscribed one hundred thousand dollars for the purpose of the Bryan campaign. This at once brought him to the front as a national figure in politics, and if the Bryan movement had been successful, he would have been assigned a post very near to the person of the great Democratic leader. But Lane is in no sense a local politician. He is, however, always prepared to support any broad national movement in which he takes an interest.

Utica gold has gone north to breed more gold in the Arctic. Mr. Lane has put more money into Alaskan mining enterprises than any other man in the world. He has sailed ships to Nome freighted with all manner of mining-camp supplies. He has built stores and warehouses and piled up mountains of coal on the Arctic beach, where fuel was not, and carried much lumber there. He built and equipped the northernmost railroad in the world, that from Nome to Anvil City, on which I travelled last summer in a journey over the tundra to the wonderful placers which Mr. Lane was developing along the bleak Anvil Creek. To see Lane seated on a rough bench on a flat car, swaying and rocking over the great marsh, one would not recognize in him the millionaire. But there I saw the man who had the grit to take up the Utica when shrewd James G. Fair had abandoned it, and spend his money like water before a penny was returned. His Nome enterprise was not less hazardous than the Utica, but he will double his money in Alaska this year.

And so, first and last, the Utica has been a great power. The influence of its wonderful store of gold has been felt in many quarters near to and far away from Angel's. Directly and indirectly many a man has prospered because of the unearthing of its great wealth.

The spirits did it all? Who shall say? Happy spirits if they can so control the fortunes of mortals! And happy mortals if they can get for guides such benign, far-seeing spirits!



A STATION IN THE UTICA MINE.

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IN THE PARK, JULY 13, 7.15 A.M. OFFICIAL TRIAL.

Members of the Aëro Club looking for the return of the "Santos-Dumont V." from her flight around the Eiffel Tower.

CIRCLING THE EIFFEL TOWER IN AN AIR-SHIP.

M. Santos-Dumont and his Experiments in Air Navigation.—The Features which make Possible the Success of his New Flying-Machine.

By Eugene P. Lyle, Jr.

Illustrated from Photographs.

AS early as three o'clock of the morning of July 12, 1901, a curious procession emerged from a hillside enclosure on the bank of the Seine and proceeded towards the silent race-course of Longchamp across the river. Besides several correspondents, this party was composed mostly of young Parisians, who slowly steered their automobiles while they bent their heads back and looked upwards. Following them, a few yards in the air, there floated a strange, mysterious shape, dim and yellowish against the hazy dawn. Several men on foot guided the aërial contrivance by ropes which they clung to jealously. Their care was natural, for they held in leash the First Flying-Machine; and by "flying-machine" is meant one that really *has* flown, and which deserves its name literally, being far, far removed from the monotony of the many failures gone before. But the young Parisians did not know as yet that it would fly, for this was to be its first trial—its *début* in the air—and not one among those gathered to witness it suspected that he was to assist at a spectacle which history may possibly compare with the launching of Fulton's steamboat or with the firing of the first locomotive.

At the race-track the balloon was pulled down till the framework rested on the ground. A young man, twenty-five years of age, went hurrying about the airship, tinkering at it here and there till the very last moment, while his comrades of the Automobile and Aëro Clubs looked on and respectfully let him have his way. He was a very little man, in shirt sleeves and a high collar, with an almost effeminate speech, and very amiable, but he seemed to know pretty well what he was about. When he had examined the tube which connects a cigar-shaped gasoline tank with the motor, he wrapped a strap around a wheel of the motor, pulled the strap off again with a sharp jerk, and thus set the motor going. Involuntarily the spectators jumped back, for the gasoline engine with its four cylinders starts with a crashing explosion, so closely followed by others that the deafening, bursting combustion is almost continuous; yet through the framework there is scarcely any vibration at all, only a slight quivering.

FOR THE FIRST TIME IN HISTORY AN AIR-SHIP OBEYS HER RUDDER.

Before climbing into his basket, the slender little aëronaut took a final look up

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at the sky. He had spent the last two nights near his balloon, patiently waiting for favorable weather. He seemed satisfied now, and climbed into his tiny car, which is just a narrow crating of willow fixed into the forward nose of the triangular frame-work. The guide-rope was slackened, and the balloon lifted him slowly from the ground. He gave a signal and the guide-rope was released. The balloon bounded into the calm air. Those below, bending back their necks, saw in the stern two big fans, the screw of the vessel, begin to turn. They watched breathlessly, for the question of that moment was, would those fans serve as wings, or would the balloon prove only a balloon after all, obeying no will other than that of the breeze? That has ever been the question when some outlandish contrivance would mount into the air, and hitherto the answer at best has been only a sadly qualified negative. But this latest contrivance of the series appeared to be acting deliberately and rationally. She pointed her nose slightly upward and rose higher. Her rudder shifted, and she slowly began to turn, and, following the track, made the circuit of the race-course. On nearing the spectators the vessel pointed her nose downward and slowly descended. A moment later the little aëronaut climbed from his basket to the ground, as one might alight from a bicycle. But the blood was stinging in his face, and joy fairly burned in his eyes. He appreciated, though only vaguely, what he had done. He had been striving to do this same thing with one balloon after another for a number of long, patient years. Before night of that day his name was known all over the world.

FIRST FLIGHT AROUND LONGCHAMP, FRIDAY, JULY 12, 5 A.M.

"This latest contrivance . . . appeared to be acting deliberately and rationally. She pointed her nose slightly upward and rose higher."

Once more, then, this little Brazilian aëronaut, Alberto Santos-Dumont, climbed back into his basket. He said that he would make the round again, and with a gesture indicated his intended landing-place. He mounted as easily as before, swept around the track, and descended neatly on the spot he had pointed out. This was certainly an

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accumulating of evidence, and he had to believe that this last air-ship of his, the *Santos-Dumont V.*, had proved a success on her first trial. It was as simple as spinning around the track on an automobile. Four more times he did the same thing. His chariot was perfectly manageable, and answered the rudder as docilely as a good horse does the reins. During all the experiments of that morning he had no recourse whatever to ballast, and was yet entirely master of his altitude. This was due to the guide-rope, a heavy cord several hundred feet long, hanging from the forward nose of the car. By pulling it toward the centre of equilibrium or letting it out again, he could incline the axis of the balloon, pointing her up or down, and then, by propulsion of the fans, he could mount higher or drop lower at will. Sometimes he attained a speed of twenty-five miles an hour.

These triumphs tending to make him more ambitious, he bade his friends *au revoir* and sailed off for the nearby station of Puteaux, returning very soon without touching ground. It was now that he declared for the little flying trip around Eiffel Tower. He refilled his petroleum can and off he started at an encouraging rate, while his friends stared after him, still too dazed for the hysterics of enthusiasm which were soon to possess them.

FROM LONGCHAMP TO THE EIFFEL TOWER THROUGH THE AIR.

The distance from Longchamp to the tower is a little more than three miles, but the airship made it in ten minutes, keeping at an altitude of from one to three hundred yards. It is difficult to imagine what must have been the astonishment of early morning visitors on the tower when they saw a man in a flying-machine come soaring near them and genially wave them his greetings.

The bizarre traveller rounded the tower and was returning whence he came when one of the gear-cords of his rudder broke. So, as naturally as a wheelman dismounts to repair a puncture, he came down into the Trocadéro Gardens, borrowed a ladder, climbed up the side of his balloon, tied the cord, and remounting, proceeded on his way back to Longchamp. Counting in the delay, he had been gone one hour and six minutes.

By this time the party at the race-course had recovered sufficiently from their amazement for more or less intelligible congratulations. He had solved the fatuous problem of aërial navigation—that was their refrain. And almost the entire press of that day supported their words. He had undoubtedly *steered* a balloon. The two essentials were there, and they had worked effectively—namely, the propeller and the rudder. He had sailed the four points of the compass, he had sailed in circles, and he had sailed up and down, and the bulky aërostat of Count Zeppelin over Lake Constance was now rated as an insignificant step, while the real, great stride had just been achieved by the young Brazilian. So his companions insisted that he should try at once for the Grand Prix.

THE BALLOONISTS' GRAND PRIX AND ITS CONDITIONS.

Now it should be explained that the Grand Prix referred to is the official goal of balloonists. A wealthy member of the Aëro Club, Henry Deutsch, founded the prize last year. The amount is twenty thousand dollars, but the conditions seemed too preposterous—very ingenious, only impossible. These conditions prescribe that the winning aëronaut shall start in his air-ship from the Aëro Club park (the enclosed hillside on the Seine near Longchamp), sail to and around the Eiffel Tower, and return and land in the park, a trip of about eight miles, without touching ground or aught else in the meantime, and all within the maximum time limit of a half-hour. Although this offered a definite incentive to plunge into what was one of the most fascinating impossibilities of the future, only the flying-machine inventors—the synonym of a disordered mind—regarded flying-machines with any respect. This fascination had long enslaved the rich young Brazilian, when one day the Grand Prix was founded, and he constructed his *Santos-Dumont IV.* to win it, seeking thereby the official recording of a definite triumph. For him the twenty thousand dollars would be merely a little purse for the building of more air-ships. But before he housed his aërial pet, *Santos-Dumont V.*, in the balloon-shed at the park that morning of July 12th, he announced to his friends that he would try again for the Grand Prix.

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SECOND FLIGHT AROUND LONGCHAMP, JULY 12, 5.30 A.M.

"He said that he would make the round again, and with a gesture indicated his intended landing-place."

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THE RETURN FROM THE SECOND FLIGHT AROUND LONGCHAMP, JULY 12, 5.35 A.M.

"Swept around the track, and descended neatly on the spot he had pointed out."

A SECOND FLIGHT TO THE TOWER BEFORE THE PRIZE COMMITTEE.

At four o'clock the next morning, July 13th, the sky was mottled with clouds, while a choppy wind blew from the west; but as there was no change for the worse by five o'clock, Santos-Dumont began making preparations for his flight. Long before he was through with testing the parts of his machine, a crowd had begun to gather in the park—wheelmen, chauffeurs, photographers, and correspondents. At 6.20 the great sliding doors of the balloon-house were pushed open, and the massive inflated occupant was towed out into the open space of the park. The big pointed nose of the balloon and its fish-like belly resembled a shark gliding with lazy craft from a shadow into light waters. In the basket of the car stood the coatless aëronaut, who laughed and chatted like a boy with the crowd around him. The Prize Committee was there and expressed its hopes for a successful trial. This committee is composed of Count Henri de la Vaulx, the vice-president of the Aëro Club, who intends shortly to cross the Mediterranean in a balloon; Prince Roland Bonaparte; Henry Deutsch, and two members of the National Institut, MM. Bouquet de la Grye and Cailletet.

From the very first the conditions did not show themselves favorable for the attempt. The wind was blowing at the rate of six or seven yards a second. The change of temperature from the balloon-house to the cool morning air had somewhat condensed the hydrogen gas of the balloon, so that one end flapped about in a sadly flabby manner. Air was pumped into the air reservoir, or ballonet, inside the balloon, but still the desired rigidity was not attained. But, more discouraging yet, when the motor was started, its continuous explosions gave to the practised ear signs of mechanical discord. It should be stated that this motor can be

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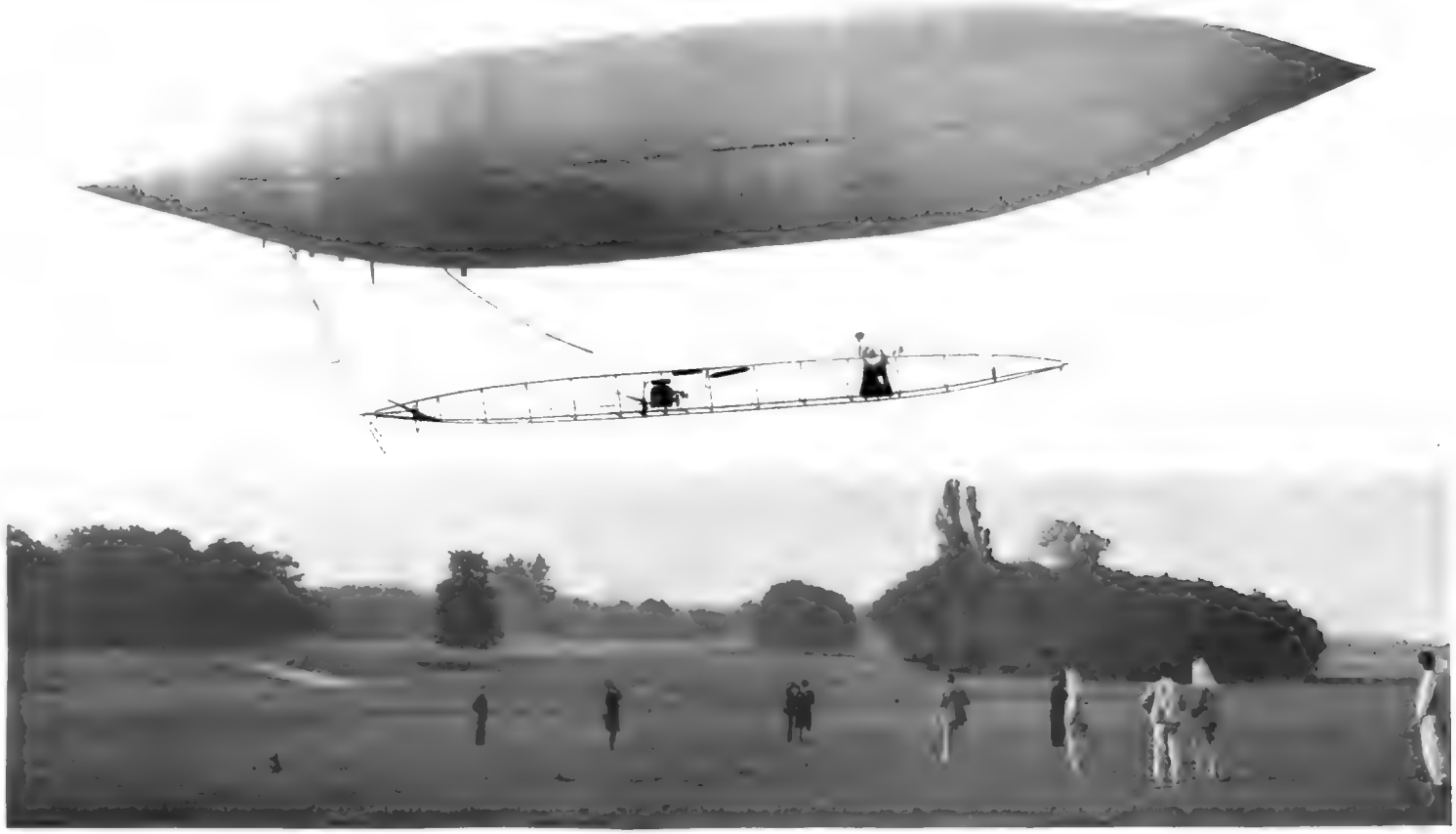

LEAVING FOR THE TROCADÉRO, JULY 12, 7.05 A.M.

"It was now that he declared for the little flying trip around Eiffel Tower."

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RETURN FROM THE TROCADÉRO, JULY 12, 8.10 A.M. SANTOS-DUMONT CRAWLING OUT OF HIS BASKET.

"He had solved the fatuous problem of aërial navigation—that was their refrain, and almost the entire press of that day supported their words."

started only from the ground, by the strap twisted around the wheel, as already mentioned. Once the motor stops while in air, there is no way to set it going again without coming down to earth.

Nevertheless, Santos-Dumont, with his sleeves rolled up, fixed himself once more in his basket with much the same air as a workman seats himself before his lathe for the day's work. His eye took a careful survey of the entire air-ship lest some preliminary had been overlooked. He counted the ballast bags under his feet in the basket, he looked to the canvas pocket of loose sand at either hand, then saw to his guide-rope. Everything appeared to be all right. Several friends shook his hand, among them Mr. Deutsch. Count de la Vaulx, with watch in hand, stood ready to begin counting the official time. The chattering stopped, and the place was very still as the man holding the guide-rope awaited the signal to let go. Then the little man in the basket above them raised his hands and shouted. On the second the time-keeper (Count de la Vaulx) called off 6.41, and man and balloon would have to be back by eleven minutes after seven.

At first it did not look like a race against time. The balloon rose sluggishly, and Santos-Dumont had to dump out bag after bag of sand, till finally the guide-rope was clear of the trees. All this gave him no opportunity to think of his direction, and he was drifting towards Versailles; but while yet over the Seine he pulled his rudder ropes taut. Then slowly, gracefully, the enormous spindle veered round and pointed its nose towards the Eiffel Tower. The fans spun energetically, and the air-ship settled down to business-like travelling. It marked a straight, decided line for its goal, then followed the chosen route with a considerable speed. Soon the chug-chugging of the motor could be heard no longer by the spectators, and the balloon and car grew smaller and smaller in its halo of light smoke. Those in the park saw only the screw and the rear of the balloon, like the stern of a steamer in dry-dock. Before long only a dot

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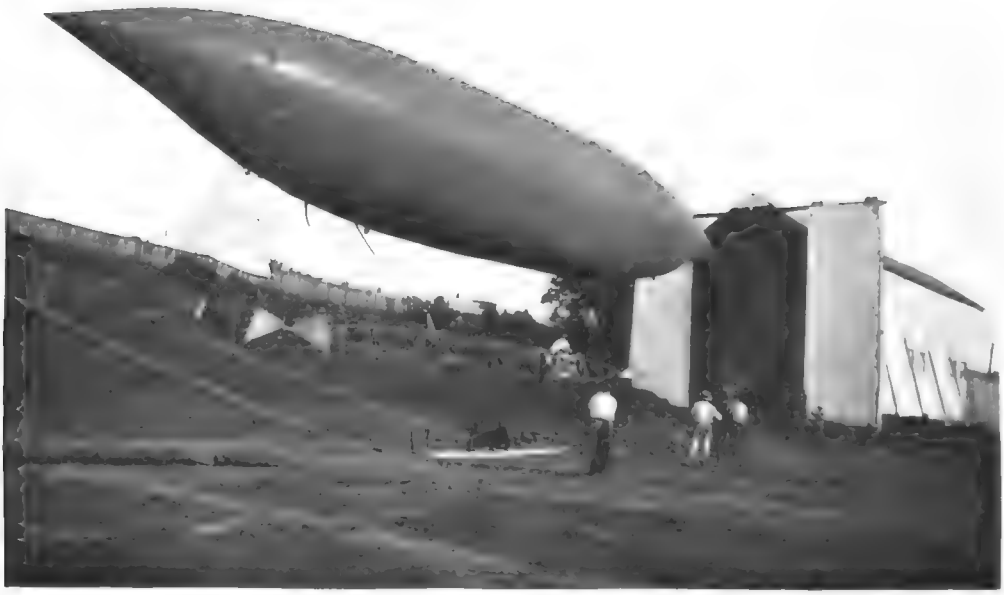

IN THE PARK OF THE AËRO CLUB. SANTOS-DUMONT PREPARING FOR HIS FIRST OFFICIAL TRIAL AROUND THE EIFFEL TOWER, JULY 13, 6.30 A.M.

"The big pointed nose of the balloon and its fish-like belly resembled a shark gliding with lazy craft from a shadow into light waters. In the basket of the car stood the coatless aëronaut, who laughed and chatted like a boy with the crowd around him. The Prize Committee was there and expressed its hopes for a successful trial."

remained against the sky, but the dot was still moving. Steadily it neared the shadowy obelisk line which was Eiffel Tower, then scarcely visible in the heat mist of Paris. Suddenly the dot vanished behind the tower, thus bringing together man's two ways of getting into the air, the one from a century just closed, the other from a century just beginning.

To the throng waiting in the park the dot seemed blotted from sight for a long while, but at last they could distinguish it emerging from the foggy ladder-shape outlined against the sky. They could not tell, however, whether it had really gone around the tower. If Santos-Dumont had not doubled the tower, then the greater interest in his return was lost. It would be no longer a race. Still the people kept count of the minutes as they watched the speck grow larger and larger, and gradually evolve into the form of an air-ship. The morning sun caught on the burnished copper of the petroleum reservoir, and the man could be seen in his car, and then a messenger in an automobile raced up to the park gate. He brought the marking of the official timekeeper on Eiffel Tower, and his announcement laid all doubts. The *Santos-Dumont V. had* doubled the tower, he announced, passing twenty yards to leeward, time 6.54. That meant half the journey in thirteen minutes, a gain of two minutes.

WAS THE GRAND PRIX WON?

The crowd gazed upward to the still distant balloon, and some in their enthusiasm yelled to the aëronaut to hurry, hurry faster. The Grand Prix was won, of that everybody was certain. But as the minutes were counted off, and the balloon did not seem to be approaching with the speed expected, doubts began to grow among the eager ones. Only four minutes left, only three. Was he going to lose, after all? There he was, steering far above the river, and they could even hear the popping of his motor. Evidently something was wrong. The air-ship labored desperately in the face of the

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wind, and when at last it hovered over the park the time was 7.22—eleven minutes late. And yet he had not landed. Instead, the wind swept him back across the river. Twice he returned with extreme difficulty; and then, suddenly, the motor stopped. With that the *Santos-Dumont V.* was as an ordinary balloon, and she went with the wind, off over the Bois de Boulogne. A moment later she came down heavily and disappeared in the trees.

A CATASTROPHE IN THE GARDEN OF BARON ROTHSCHILD AND THE RESCUE BY A PRINCESS.

A dozen friends sprang to their automobiles and raced away in that direction. Each one dreaded finding Santos-Dumont probably mangled and lifeless. They found him on his feet, with his hands in his pockets, reflectively looking up at his air-ship among the top branches of some chestnut trees in the grounds of Baron Edmund de Rothschild, Boulevard de Boulogne.

"I should like to have a glass of beer," he announced, which called forth a nervous laugh of relief.

Now next door to Rothschild lives H. R. H. the Comte d'Eu, and from a window H. I. H. the Comtesse d'Eu had been watching the antics of the flying-machine and its finale. Her Imperial Highness is a daughter of Dom Pedro of Brazil, and consequently a compatriot of young Santos-Dumont. As there ought to be a princess somewhere in an air-ship story, it proved quite convenient that Her Imperial Highness lived next to the Baron Edmund de Rothschild, for she sent over a hamper of champagne and refreshments, with kind inquiries. Santos and his rescuers disposed of the champagne and refreshments; and then Santos, coatless, dusty, and mussed up, hurried over to thank the princess. Her Highness spoke words of encouragement, and pointed to Dom Pedro's picture, and then Santos went back to untangle his air-ship from the chestnuts.

When he had cut the wires between the balloon and the car, he discovered, greatly

M. SANTOS-DUMONT'S QUARTERS ARE MORE COMMODIOUS ON EARTH THAN IN THE AIR.

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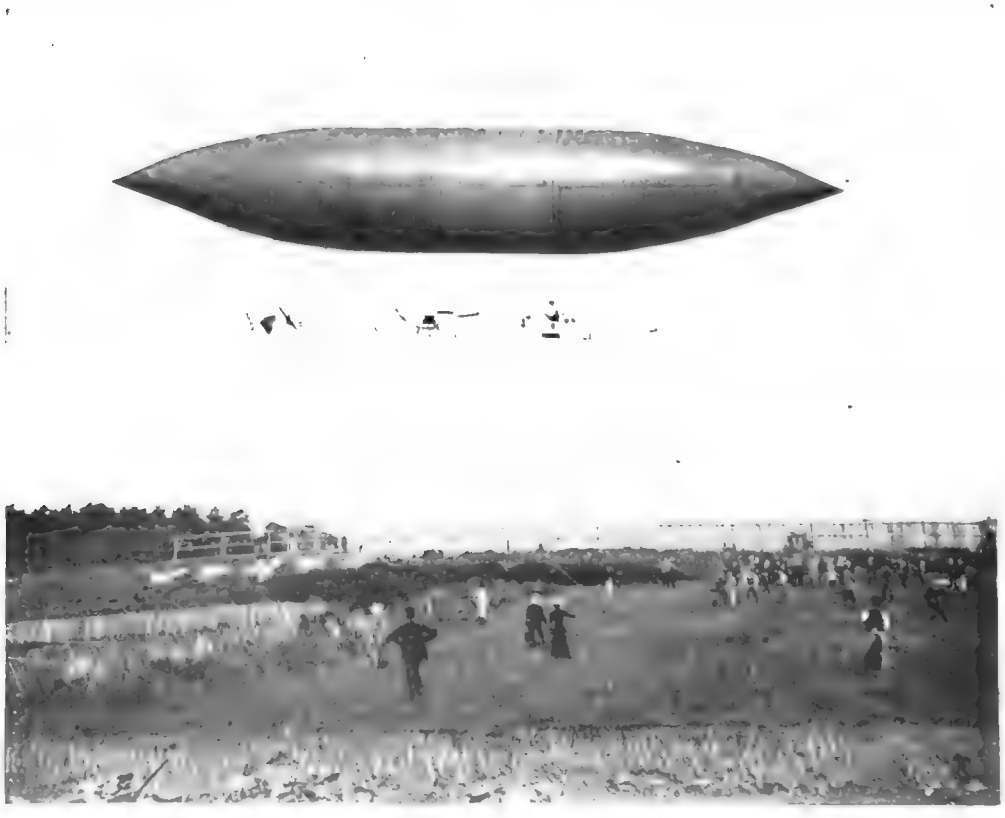
to his surprise, that the damage was really nothing. The delicate skeleton framework was unhurt, except for a slight spraining of the propeller-shaft. Then the young man was jubilant, for his treasure had certainly looked like a wreck. He could listen to questions at last, and he gave his story of the flight and fall, which you may be sure was listened to eagerly. To say nothing of the strong wind he had to fight against in

looning, he decided to come down quick where he was. So he ripped out a panel of silk and found himself in the tree-tops.

But, after all, the only thing that kept him from winning the prize was the time limit. It must be considered, however, that the donor asks the competitors to do something in a half-hour which has never been done before, although men have been trying for a century, and that is to steer a balloon.



THE START ON THE FIRST OFFICIAL TRIAL AROUND EIFFEL TOWER, JULY 13, 6.41 A.M.

"The little man in the basket above them raised his hands and shouted. On the second the time-keeper (Count de la Vaulx) called off 6.41, and man and balloon would have to be back by eleven minutes after seven."

coming back, his chief trouble was with his motor. Soon after going up, one of the cylinders had stopped, and a little later a second. As he could not restart them his motive power was thus cut down one-half for the rest of the trip, the motor at last giving out altogether. The wind, of course, carried him back over the river, and as he did not wish to come down in the streets of Boulogne beyond, and perhaps on top of somebody, and be taken up for reckless bal-

Weighed against a century, a delay of eleven minutes cannot count for much against success.

PREPARATION FOR A THIRD TRIAL.

Within a week the *Santos-Dumont V.* was all ship-shape again, and awaiting good weather for another try at the Grand Prix. The weather, though, had been unobliging, and Parisians had haunted the Aëro Club

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THE AIR-SHIP ABOVE THE PARK, TURNING TO THE LEFT, PREPARATORY TO HEADING FOR THE EIFFEL TOWER. THE OFFICIAL TRIAL OF JULY 13TH.

"Then slowly, gracefully, the enormous spindle veered round and pointed its nose towards the Eiffel Tower."

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OFFICIAL TRIAL, JULY 13TH. PHOTOGRAPHED FROM THE EIFFEL TOWER.

"Steadily it neared the shadowy obelisk line which was Eiffel Tower."

park in vain. Sunday, August 4th, Santos-Dumont did, in fact, start for another trial, but he had not gone a quarter of the distance when he turned round and came back. The guide-rope was not working right. Another spectacle, however, rather offset the popular disappointment. When fully six hundred feet in air, the plucky little fellow climbed out of his basket and moved around on the slender framework to adjust a cord that did not suit him.

THE TRIAL AROUND THE EIFFEL TOWER AND BACK.

It was on August 8, 1901, that M. Santos-Dumont made a third trial for the Grand Prix, with the odd-looking air-ship constructed of two cigar-shaped balloons, with the car for the basket and motors suspended between them. Instead of disaster and destruction, he began with every prospect of success, and strengthened his claim as a navigator of the air. He started from the park at 6.12 A.M., under the best of conditions. His balloon rose quickly in the almost absolute calm, so that without loss of time he started the screw and veered round in a straight line for Eiffel Tower. The trip there was as a bird's flight, clean-cut and unswerving. He gained and rounded the tower in nine minutes, a gain of four minutes over his first trial, or less than one-third of the time limit. He had, therefore, twenty-one minutes in which to make the same trip back. It would be stubborn hard luck that could keep him from the prize. But that is what happened.

The tower was no sooner rounded than difficulties seemed to begin. Without apparent cause the air-ship suddenly pointed upward, and mounted a hundred yards higher in air. Then it began to sink toward the roofs, bereft of buoyant force or vitality. It was beyond control, and its navigator was being tossed in midair, more helpless than a sailor clinging to a plank. He started the ventilators, to inflate the ballonet with air and make the balloon rigid, but as a climax to despair the ventilators would not work. The balloon became flabby, and even its ends doubled on itself, like a pocket-knife. This brought the wires that suspend the framework into trouble with the turning screw, and in a moment several of them snapped. Just in time to save himself from being cut away from the balloon entirely and dashed to the ground, Santos stopped the screw, and then the unwieldy air-ship dragged lower to the earth, and was soon skimming over some high hotels that had been built for the Exposition. Once he was jolted against a cornice, and once again he was so low that his guide-rope coiled along the ground. A carpenter seized the end and wrapped it around the iron bars of a window. But the breeze carried the balloon on, and with a jerk the guide-rope tore out the iron bars. On the edge of the next hotel roof the balloon was stranded and wrecked. The framework, though, holding the heavy motor and the man, dangled from its wiring over the wall of the building. A moment it hung suspended, then its lower end settled on the roof of a two-story restaurant next door, and its upper end against the wall of the hotel. There was a space between the two buildings, and the framework spanned this space almost perpendicularly. The delicate wooden beams strained and cracked, ready to break and bring its load to the ground.

A company of firemen were on hand almost at once, and from the top of the hotel they threw a rope to Santos-Dumont, who tied it around his waist and allowed himself to be drawn up. He had not suffered a scratch, but he suffered much more than that when the firemen began to extract his beloved air-ship. With each cracking of wood he shuddered as though it were a bone; yet despite his anxiety and the care of the firemen, the framework broke into halves,

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and was soon found to be irreparable, and the same fate met the balloon. The only consolation was the motor, which seemed to be unhurt.

"Now what are you going to do?" one of his friends demanded.

"Why, begin again, of course. One has to have patience."

And that same day he gave orders for another balloon, which will be the balloon of the air-ship *Santos-Dumont VI.* The new air-ship will be on the same pattern as the old, except with a slightly greater cubic capacity. It can hardly be ready for a prize trial, however, before the contests next spring. Still, Santos-Dumont knows now that he can navigate the air, and he is merely going to do again what he has already done.

But M. Santos-Dumont will soon have competitors, among them M. Deutsch himself, who expects to put in the field within a short time a colossus sixty-five yards long, with a capacity of over twenty-five hundred cubic yards, and a gasoline motor of sixty horse-power.

TAKEN FROM THE EIFFEL TOWER, JULY 13, 1901. THE BALLOON IS OVER THE TROCADÉRO, ABOUT ONE HUNDRED YARDS AWAY.

A DESCRIPTION OF THE AIR-SHIP.

RECALL the flying-machine of your imagination, and you will have ready-made for your mind's eye a likeness of this *Santos-Dumont V.* It is simply that conventional creature pictured in the usual wild tale of the future, the regulation cigar-shaped thing 'mid a vague complication of wings and rudders and cords and cylinders. The gas-bag is a tremendous cigar, while the framework beneath for basket and motor is a smaller tremendous cigar. Now there is a reason for this shape quite apart from the demands of twenty-first century romances. It would be as absurd to try to steer a spherical balloon as to guide a spherical steamboat. The spindle form offers less resistance to air currents, so almost from their earliest experiments the flying-machine architects have adopted the cigar for a model. To secure rigidity they put an air-balloon, or ballonet, inside the gas-balloon, and when a cooling cloud or change of temperature contracts the gas, they pump air as needed into the

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ballonet, which makes the entire bag tight and snug. Santos-Dumont first fills his balloon as full as possible with pure hydrogen, and the inner balloon lies empty in the belly of the big one. He thus has as a margin against condensation the ballonet's capacity, fifty cubic yards. The ballonet fills with air automatically from a pump worked by the motor, and in case of expansion and too great pressure the springs in the valves are forced open and the air is let out first, and the gas afterwards, if necessary. In the photographs you may see the air-duct hanging from the balloon to the pump.

The tiny steel threads that suspend the framework seem absurdly inadequate. Near the ends they are twisted into springs, which allow for a slight rocking caused by the motor's vibration. A few yards away the fine piano-wires are invisible, and then the man in his aërial car appears to follow as a satellite under the balloon. The great yellowish bag of hydrogen, 37½ yards long, 6½ yards in diameter, with a capacity of 715 cubic yards, looks sleek and peeled, like the pigskin of an enormous Rugby football, and nothing at all like silk. Each panel in the texture has been rigorously tested under pressure, and is capable of the maximum strain exacted. The elongated, triangular car beneath is constructed of three slender unpainted pine beams with cross-pieces. When examined as it lies stalled the long length of the balloon-house, this car appears altogether too delicate for carrying a man and an engine several hundred yards over the housetops. Though over 59 feet long, it weighs only 110 pounds, and early in the spring of 1900 the inventor was able to pack it in his trunk by sections, bringing it from Nice, where it had been made during the winter, to Paris. The carefully chosen strips, bent to form the long curves of the triangular frame complete, are never thicker than two of your fingers put together. During this spring he remounted them in his workshop at the Aëro Club park, the workshop being also the great barn of a balloon-house. He made the joints of aluminum and fastened the cross-pieces with thin steel wire. About eight yards from the stern he suspended the gasoline automobile motor from the upper beam of the triangle by piano-wires. Here the compact little engine of four cylinders and sixteen horse-power hangs like a spider in the centre of her web. Over each cylinder spins a ventilating fan to prevent overheating. The motor turns a shaft, and attached to the shaft is a propeller, exactly like the screw of a ship. The two wings of the

LANDING OF THE BALLOON AMONG THE TREES IN THE GARDEN OF BARON EDMUND DE ROTHSCHILD, JULY 13TH.

"The delicate skeleton framework was unhurt, except for a slight spraining of the propeller-shaft."

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OFFICIAL TRIAL, JULY 13TH. RETURN TO PARK AT 7.20 A.M. PHOTO TAKEN FROM DIRECTLY BENEATH.

"There he was, steering far above the river."

screw are of silk stretched over their frames like the head of a drum. They measure 4½ yards. Ordinarily the industrious little motor spins the shaft around at the rate of two hundred revolutions to the minute; but since putting things into shape after his descent of July 13th, the inventor has been able to increase the speed to 210 revolutions a minute. The whirling pinions then have a striking force of 175 pounds. Above the propeller and under the tail of the balloon is the rudder, a curved triangular blade made in the same way as the wings. As both propeller and rudder are thus placed at the stern, the forward end is left free for the guide-rope, by which the air-ship may be inclined upward or downward. By this device the aëronaut may ascend or descend. In his former balloons he used sliding ballast-bags at either end to maintain his equilibrium, but in this last balloon he has been able to discard these.

To readjust the balance against the motor as well as to equalize the strain on the wires suspending the framework, the basket is placed forward of the centre by nearly eight yards. This basket is a deep, narrow affair of open willow-work. A larger man than the wiry aëronaut would have to squeeze to climb into it. On either side a narrow wooden bar stretches out three or four yards, which is designed to prevent undue tipping to one side or the other. As the pilot stands there in his basket he resembles a performer on a tightrope with his balancing-pole. Since the head of the concern is in the basket, all the many wires that operate one thing or another communicate with this central administrative bureau like the nerves with the brain. On the front edge of the basket is a wheel, really the pilot's wheel, but placed horizontally as on an automobile. This operates the rudder. To switch the propeller-shaft from the motor and stop the fans there is an electric key. For each of the valves in the belly of the balloon there is a wire-end at the basket, besides still another one for the big valve in the top, should the balloonist wish to descend rapidly, and, yet again, there is an emergency cord which tears a panel out of the silk and lets the gas fairly pour out. It was this cord that Santos-Dumont pulled when he chose the Rothschild chestnut trees between the Seine and the streets of Boulogne. As to ballast, he has small bags of sand under his feet, and a canvas bag on either hand, about a hundred pounds in all. Thus it will be seen that he has several things to think about at the same time. Though seemingly very complicated, this air-ship that really navigates the air is, after all, a simple machine, and by the side of the wonderfully made air-ships that yet do not navigate the air it is a child's toy for simplicity. It is one-fourth as large as the Zeppelin balloon. In fact, it is the smallest motor aërostat that has been constructed up to date. The entire car complete weighs but 550 pounds.

SOME ACCOUNT OF THE INVENTOR.

TO arrive at this result, which is conceded to be the first actual steerable air-ship, Santos-Dumont has tinkered away some five preceding balloons. He came to Paris expressly to make his career in the air. He bade farewell to the plantation of his father, the Brazilian coffee king, where as a boy he had speeded locomotives, real compounds, over the premises. He aban-

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doned these toys, and took up with what the French love to call the most French of inventions, flying-machines. He allied himself with those rich young Parisians who seek amusements more *chic* than gilded dissipation; that is, the more intellectual, though scarcely more rational, pursuit of bizarre methods of locomotion. Though able to have stables and yachts and palace-cars, they prefer automobiles and balloons. The youthful Alberto began by climbing Mount Blanc to see what high altitudes were like. Then, in 1898, he ordered himself a balloon and called it the *Brazil*. It was a ludicrously small affair, of not more than 145 cubic yards. He would return from a trip with the balloon in his grip. But he was not content. The *Brazil* was spherical, unsteerable—in a word, old-fashioned. He put the motor of his automobile into the basket, and was thus the first to apply gasoline to aërial navigation. But as yet the results were not important. That same fall he launched the *Santos-Dumont I.*, the first of his cigar-shaped experiments. But the weight of the basket ten yards beneath made the balloon cave downwards, and air-ship and man tumbled five hundred yards to earth without getting hurt—a mere incident. Next year appeared the second *Santos-Dumont*, of the same form, but a little longer. He went up Ascension Day, became dissatisfied, and began work on his No. 3. This one was 22 yards long, with a capacity of 650 cubic yards. The motor worked well, and he made several encouraging ascensions near Eiffel Tower.

Last year, with his No. 4, he had tried for the Deutsch prize, but was awarded only the annual interest, of about $760, on the principal amount, for having done the most for aërostation during the year. He promptly returned the money and founded a new prize with it, to be awarded for the first trip around Eiffel Tower, no time limit. He had the foresight to bar himself from this competition. The *Santos-Dumont IV.* had a capacity of 546 cubic yards, with a nine horse-power, two-cylinder motor giving one hundred revolutions a minute to the screw. The engine and a bicycle saddle were perched on a bar suspended under the balloon. He started the engine by working the pedals under the saddle, and by cords he controlled the electric lighting of the motor, and the management of the rudder, ballast, and equilibrium. He made almost daily flights with this balloon, then later on put in a sixteen horse-power engine. This, of course, made a larger gas-bag necessary, but he simply cut in half the one he had and lengthened it to 36 yards, as you would a dining-room table. Soon after this the autumn air gave him pneumonia, and he had to go to the Riviera, where he began work on No. 5, his latest pet.

THE SECRET OF THE SUCCESS OF THIS LATEST AIR-SHIP.

Now that you have followed the inventor through the whole story, you are beginning to demand where, after all, is the great monumental and mysterious secret of aërial navigation that has been discovered. You have not stumbled upon the trace of one. There has not been a single new mechanical principle involved. The fact is, there has been no secret to discover. The secret of aërial navigation was already discovered when the first automobile with a gasoline motor was built. When Santos-Dumont robbed his automobile of its motor and strapped it into the car of his balloon, he was on the right track. But he certainly had achieved nothing that he could patent. The secret may also have been discovered when the steam-engine was invented, or again when electricity was chained down to man's service, only up to the present there is this fact, namely, no one so far has been able to make a steam-engine or an electric battery run an air-ship. That may happen later, but meantime the gasoline motor does the work for Santos-Dumont. And now the question is, why does it, rather than either steam or electricity? The entire answer lies in this one word—"weight."

When away back in 1783 the crinoline skirt of Madame de Montgolfier, drying before the fireplace, filled with hot air and puffed up to the ceiling, this same word, "weight," became the keynote of battle and the problem in ballooning. Joseph Montgolfier had beheld the antics of his wife's skirt, and the word that involves the riddle and the solution spelled itself on his brain. That is, he reflected that the inflated crinoline had become lighter than air. So he set to work and astounded the world with the first balloon, an humble paper globe filled with hot air that soared upwards but a few yards. Thus having once got into the air, man has ever since been trying and try-

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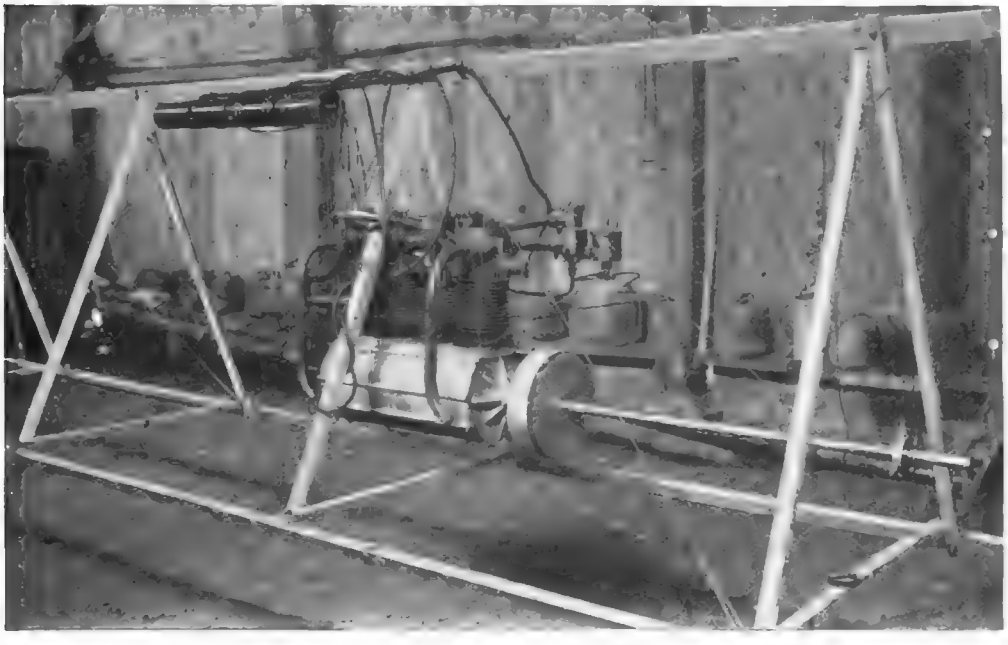
ing to steer himself while there. But any motor that would be powerful enough has always made the balloon heavier than air. For instance, Henri Giffard, in 1852, tried steam as motive power, and he was the first to adopt the cigar-shaped bag, but his engine would not propel the balloon, simply because it had to be too light for the power exacted of it. Twenty-five years later Dupuy de Lome went back to first principles and tried man-power, but the man was even less adequate than Giffard's feeble engine. In 1883 another Frenchman, Tissandier, experimented with electricity, but as his batteries had to be light enough to be taken up in the balloon, they proved effective only in helping to weigh it down to earth again. Krebs and Renard, military aëronauts, succeeded better with electricity, for they could make a small circuit with their airship, provided only that no air was stirring. Enthusiasts cried out that the problem was solved, but the two aëronauts themselves, as good mathematicians, figured out that they would have to have a motor eight times more powerful than their own, and that without any increase in weight, which was an impossibility at that time.

Shortly after this, though, people began to drive round in carriages without horses, and their motive power was the gasoline engine. Tissandier's electro motor weighed 375 pounds per horse-power; Santos-Dumont's petroleum motor, twelve pounds per horse-power. In both cases fuel and all accessories are included. Now just exactly in this enormous difference of weight lies the secret of aërial navigation as solved the other day by the young Brazilian.

The explanation why the petroleum motor is such a tremendous giant for its size is very simple. The greater part of its fuel is in the air itself, and the air is all around the balloon, all ready for use. The aëronaut does not have to take it up with him. If he did, he would be crushed to earth with the weight of his reservoir. But that proportion of his fuel that he must carry, the coal-oil can, is comparatively insignificant. The difference between carrying this fraction and carrying all the fuel, as for steam or electricity, makes the difference between the newer kind of motor and the two old kinds. A few figures will prove startling. Two and one-half gallons of gasoline weighing 15 pounds will make a 2½ horse-power



THE SIXTEEN HORSE-POWER PETROLEUM MOTOR OF THE SANTOS-DUMONT V. GIVING THE SCREW TWO HUNDRED REVOLUTIONS PER MINUTE.

"The explanation why the petroleum motor is such a tremendous giant for its size is very simple. The greater part of its fuel is in the air itself."

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autocycle cover 94 miles in four hours. Santos-Dumont's balloon needs less than 5⅓ gallons for a three hours' trip. It weighs but 37 pounds, and occupies the slender cigar-shaped brass reservoir which you will notice near the motor. Now, then, an electric battery of the same power would weigh 2,695 pounds, and yet would last only 25 minutes. If we consider the weight and volume of fuel in the air which the gasoline motor does not have to carry up, we will see, on accepting chemistry's word, that a liter of gasoline (3½ pints) consumes during combustion 5.45 pounds of oxygen in the air, which means 27¼ pounds of air. Imagine, therefore, a balloon carrying a reservoir of air for its motor! One liter of gasoline would require an air-magazine a yard square, and as high as a four-story house. For Santos-Dumont's oil-can this magazine would have to be a thousand feet high, or about big enough to hold the Statue of Liberty.

As to what this last air-ship really means for aërostation, French opinion differs to the overheating point. Again "weight" is the battle-cry raised in the two opposing camps of balloonry. One camp maintains that the balloon *lighter* than air is the beginning and end of the question, and consequently they hold that Santos-Dumont has found the ultimate solution, because he can steer his inflated chariot. Their opponents give the Brazilian big credit for making a dirigible flying-machine of any kind, but they contend that the problem rests unsolved so long as the air-ship is not *heavier* than air. The discussion has grown quite ardent. There are liable to be some duels most any time if cold weather does not set in.

The lighter-than-air people argue that on an aëronef or aëroplane (heavier-than-air machine) the operator would be at the mercy of his motor. If the motor stopped, the air-ship would come down like a clod, having, of course, no gas-bag to hold it up. The heavier-than-air contingent admit that this is a point to be considered, and that therefore the motor will have to be a very reliable motor indeed. And then they proceed to point out that the aërostat (lighter-than-air machine) can never be of any practical use, anyhow, even if you can steer it. For war purposes, it offers too large a target for the enemy. The risk of a motor stopping on a small aëroplane would be much healthier. For private promenading it would be too costly. And as for general transportation—not to be considered at all. The *Santos-Dumont V.* requires 550 cubic metres of gas for one little man of 120 pounds, and even then the little man cannot take on more luggage than his life and his nerve, with a fair chance of losing both before he gets back. Therefore a balloon with the passenger list of a small transatlantic steamer would have to be some twenty times larger than Barnum's biggest tent, and the balloon-house would cover a fair-sized city. Only the traveller with a million to spare could book a passage thereon, and all the other millionaires would go bankrupt financiering such an enterprise. The gentlest breeze would prove a tempest for the fabulously stupendous gas-bag, and the pressure under ordinary conditions would make a metal covering absolutely necessary. On the other hand, the aëroplane—when found—may be of a size more in proportion to the carriers on sea and land, and by inclinations of its surface it need not fear a gale much more than does a ship.

In conclusion it seems that the *Santos-Dumont V.* may be correctly rated as the last evolution from Madame de Montgolfier's crinoline skirt. It is the culmination of balloons lighter than air. It is the first to make a trip in a breeze and come back to a point indicated beforehand. In a word, it is steerable. Of course there remains room for improvement, but hardly for further evolution. In aëronautics all evolution from now on must begin from the bird, and end in the aëroplane. And perhaps that will involve a new principle of mechanics. The genius who discovers it will be a colossus, beside whom the clever and daring craftsman who applied an automobile motor to an inflated spindle will be but the merest pigmy. The aëroplane, though, has not left the ground yet. But the *Santos-Dumont V.* has. The neighbors have already made complaint. They protest against the early-morning flights, when the popping of the motor a few yards over their roofs breaks in on their slumber. There you have a foretaste of the future.

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IN OKLAHOMA.

By Eleanor Hoyt.

Illustrated by James Preston.

THERE are several ways of seeing Oklahoma. There is only one way of knowing the Territory.

The Congressman and the red-haired girl proved that.

They travelled from New York to Bluffville on the same car. He was looking for wheat statistics. She was in search of new experiences, and incidentally of a brother who had started a lumber yard in Bluffville.

Both travellers saw Oklahoma after a fashion, but only the red-haired girl learned to know it. That was because the Congressman, with masculine logic, contended that the way to see a country was to travel about it, while the girl, with feminine intuition, divined that the real way to accomplish the end was to sit on a lumber pile and look at the country through the eyes and the words of the men who made it.

There were a few Eastern women in Bluffville, but they were married, and several years in the Territory had rubbed off the old hall mark; so Wilson's sister made rather a sensation.

Billings, the saloon-keeper, saw her first.

"Say, boys," he announced, "There's a red-headed girl sitting on a pile of two-by-fours up in Wilson's lumber yard, and she's a peach."

The boys were doubters. They strolled, singly and collectively, past the lumber yard, and Billings's reputation for veracity soared above par.

Dawson wasn't contented with walking by the yard. He lighted a large cigar by way of steadying his nerves, pulled his hat further over his eyes, and turned into Wilson's office. A half hour-later he was back in the saloon.

"She's his sister, Miss Betty Wilson, from New York, and she's the real thing," he said, with a deep conviction.

Meanwhile, the girl on the lumber pile was feeling vaguely disappointed. She looked off across the plain, whose monotonous level was broken only by occasional farm buildings, and she wondered how one could live in a treeless country and not go mad.

Then she turned and looked down the wide, dusty main street of the town. It was flanked by rows of one-story wooden buildings, and ended in an open square surrounding a squat brick court-house, at whose door two sickly poplars stood guard, like exiled and homesick grenadiers. From the main street the town wandered off in forlorn little shacks and tiny, neat, cigar-box cottages, dotted indiscriminately along broad dirty roads that bore sounding titles.

It was all ugly, drearily ugly. The girl had lunched with one of her brother's married friends, and eaten chicken croquettes and salted almonds in a four-room shack whose good rugs and books and pictures and china seemed as much out of place as a faun in a button factory. Betty wasn't old enough to see the dramatic interest of the surf line where east broke against west, and she went away from that luncheon exceeding sorrowful. Salted almonds and embroidered doilies, and not a cowboy or an Indian within sight. Was this what she had gone out into the wilderness for to see?

The street in front of the lumber office was lined with wagons and cow-ponies, and crowds of roughly clad men thronged the wooden sidewalks. On the opposite corner a number of horse-traders were gathered round a bunch of broncos, and teamsters had halted their loaded wagons to talk with the swaggering, loud-voiced group.

Suddenly something happened, and the red-haired girl sat up. A long, lean man, in riding clothes and sombrero, stood facing three burly, thick-set traders.

"You'll swallow that or an ounce of lead," roared one of the trio, drawing a revolver.

The crowd surged back out of range.

"You're a d—— horse-thief, and I can prove it," said the man in front of the shining steel barrel. He moved quickly, as he

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spoke, and a bullet buried itself in the buildings behind him.

The three men lunged toward him, and he backed up against a wagon full of cordwood. Something flashed in his hand. There was a second shot, then another, and another. Two men lay in the street. The cowboy stood unhurt save for a red streak, broadening on his cheek.

The third horse-trader brought his heavy whip butt down viciously upon the cowboy's right wrist and the revolver spun across the road, but the disarmed man reached for a stick of wood with his left hand, and the last of his assailants went down in a crumpled heap.

The crowd closed in. When it opened out, two men were being loaded into an empty wagon. One, supported by friends, was limping toward the drug-store, and the cowboy, followed by an admiring throng, was slouching carelessly into the nearest saloon.

A loose-jointed, keen-eyed man dropped down upon the lumber pile beside the red-haired girl.

"Pretty scrap, wasn't it?" he drawled, as he lighted his pipe. The girl recognized the sheriff, to whom she had been introduced, with due ceremony, earlier in the day.

"Aren't you going to arrest anybody?" she inquired breathlessly.

"What'd I do that for?" asked the Majesty of the Law, in mild surprise.

"Do you allow fights like that on your town streets?"

He shifted his pipe, and expectorated cheerfully. "Why, Jim licked, didn't he?"

"The cowboy did."

"That's Jim—and they were three to one agin him, weren't they?"

"Why, yes; but——"

"Well, if they couldn't take care of themselves, they needed killing, and Jim don't seem to need me to take care of him. Nobody's badly hurt, anyhow, and I can't see as I've a call to jug anybody for that row. It kind of settled itself."

"'SHE'S HIS SISTER, MISS BETTY WILSON, FROM NEW YORK.'"

When the red-haired girl went to bed that night she was distinctly cheerful. After all, things did happen in Oklahoma.

All sorts and conditions of men floated in and out of Wilson's lumber yard. Some of them wanted lumber. Some liked Dick Wilson, and showed it by loafing in his office. After Dick's sister arrived, they came thicker and faster than ever.

She fraternized with them all, and held court on a pile of joists which made a good place from which to watch the street. Every man within a radius of seventy-five miles around Bluffville took his turn at entertaining her, but the men who most persistently acted as guide, philosopher, and friend were the philosophical sheriff and Tom Bailey, gambler, dead shot, and Harvard graduate. Some brothers would have shied at Tom. Dick Wilson only grinned.

"He'll spoil your taste for Willy boys, Betty," he said, "but he'll not hurt you, and he knows the Territory. Don't hurt him."

So the couple sat together under the shade of the lumber shed very often, and the gambler told the red-haired girl about

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the people who passed, and about a good many people who didn't pass.

"That's Slim Jim," he said one day, as he and Betty looked down the street from their vantage point on the lumber pile. "Did you ever meet him?"

"No, but I've seen him fight."

"That's good. He's a dabster at it, isn't he? But eating is his long suit. He can eat more than any man in the Strip, and there isn't a boarding-house keeper who will board him at regular rates; but he can't get an extra ounce of flesh on those bones.

"He's an old Texas man. He says he can go broke anywhere with perfect impunity. All he needs to do is to tell the first man he meets a hard-luck story, and pump up a cough. They put him up at a hotel and take up a collection for him."

Just at this point in the conversation the sheriff hove in sight and came across the yard with his lazy, side-wheeler motion.

"Now wouldn't you think that man was slower than molasses in winter?" asked the gambler musingly. "He's made out of steel wire and raw hide. He's quicker on the trigger than any man in the country. He has a mind that works like chain lightning, and an iron nerve, and eyes in the back of his head, but just look at him."

The sheriff dropped in a disjointed heap upon a friendly joist.

"I was telling Miss Wilson about Slim Jim," volunteered the gambler.

"SUDDENLY SOMETHING HAPPENED."

"Oh—well, it's a long story. He's a character, Slim Jim is. Don't you get stuck on him, though, Miss Wilson. He's tarnation shapely, but he's married. Did Tom tell you about his marrying? No! Well, that was the only time anybody got the drop on Jim.

"You see, it happened just a little while after the run for the Strip, and Jim's never been sorry but once. That's all the time. She was a Yankee, and came down to visit her sister. There wasn't another pretty girl within miles, and the boys went clean daffy about her. There were picket lines of cow-ponies hitched to her brother-in-law's fence all day and every day.

"The girl picked out two young fellows who had good claims, side by side. They were both sooners."

"What's a sooner?" asked the red-haired girl.

"Chap who gets in and stakes his claim before the Government signal is given. He has no legal right to his claim, and any one who can prove him a sooner can turn him out, and stake his claim. Well, for a while this girl couldn't decide which of the two fellows she liked the better; but, finally, she made up her mind. Both of the duffers had told her their sooner stories. She got the one she didn't want to marry to tell his story before witnesses. Then she disproved his title, staked his claim, and married the man next door. That was Jim. They've got a nice half-section, but Jim says that sometimes he feels as sick as he looks, and

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that he wouldn't advise any man to marry a business woman. If he were a woman he'd get a divorce, but a man can't very well do that, even in Oklahoma."

The girl looked thoughtful.

"Divorces are easy down here, aren't they?" she asked. "I lunched with the banker's wife the other day, and she said something about the time when she and John were divorced. She didn't seem sensitive about the thing, but I didn't like to ask questions."

The gambler and the sheriff both chuckled.

"Why, bless your heart, she wouldn't have cared," said the sheriff. "She and her sister both got divorces, just before the run. You see a man and his wife can stake only one claim. That's a quarter-section. Now those two couples wanted two half-sections. So they got divorced, made the run, staked four claims; and after the claims were proved, they married again. Each family had a half-section. See?"

The red-haired girl gasped. There was a direct simplicity about Oklahoma methods that startled her.

"Did many women run?" she asked weakly.

"Droves of them."

"Tell me about a run. What's it like?"

The sheriff blew a cloud of smoke.

"What's it like, Tom? You tell her," he said, turning to the other man.

The gambler crossed his knees and clasped them with his white, scholarly hands, that gave the lie to his rough clothes and hard face.

"Like?" he said reflectively. "It's like a lunatic asylum on a spree. It's like a circus chariot-race and a steeple-chase and a county fair rolled into one. It's like Judgment Day, with very few sheep in the deal. You get all sorts at a run, but three-fourths of them are has-beens. There are men from all quarters of the earth, but they've nearly all failed somewhere else and are playing for new stakes. Then there are the women who have been drudging for some one else, and are making a break for homes of their own. Some men and women are going into the thing just for fun. Oh, they are assorted qualities and sizes, all right enough. There are lots of fine men and splendid women in the gang, but I've found that it's a good rule not to go into ancient history with Oklahoma neighbors. Now I'm long on ancient history. My ancestors were great stuff, and I lived up to them for a while. It was the effort of doing it that brought on a moral collapse and put me where I am."

"Did you ever run?" asked the girl. The gambler flushed.

"Well, hardly. I'm a good shot."

"But you can't get a claim by shooting."

Tom laughed.

"Oh, you mean was I ever in a run. Yes; I ran for the Strip. I didn't want the land. What would I do with it if I had it? But I wanted experience. I got it. That run was great. Just ahead of me, when we broke away, was a fat old darkey on a raw-boned mule. She had on a bright red calico dress, and she was riding astride, lamming the mule, and yelling like a calliope. The mule ran like a prairie fire, and was still going when I dropped out. I didn't run far. The plunge at the start was what I wanted. It was like going over Niagara. It was the greatest mix-up I was ever in in my life, and that's saying a good deal. I don't know how my pony ever kept his legs."

"You staked, didn't you?" drawled the sheriff.

"Oh, yes, I staked; but a woman staked the same quarter-section, and I didn't care anything about it, so I wouldn't contest. The woman was a dressmaker, and found she was losing her eyesight; so she decided to have a go at the Strip. We rode into the filing station together, and I held her place in line for her while she got a night's sleep. She has a very decent little farm now."

"Were all the men as nice to the women as you were?" The red-haired girl's voice was soft, and her eyes were approving. He laughed.

"Well, no; I can't say that the Sir Galahad act was popular. Still the men did try not to interfere with the women if it could be avoided."

"There were the Gateses," put in the sheriff dryly.

Both men looked amused. The gambler took out a fresh cigar.

"Tell her about them," he suggested, as he felt for a match.

"Never met Mr. and Mrs. Gates, did you?" inquired the sheriff.

"No, I think not," said the girl, wrinkling her forehead in an effort to remember.

"Well, your brother knows them. That

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was a case where a man and woman contested a claim, and no politeness about it either.

"They both made the run. Mrs. Gates was Miss Johnson then, a crisp, pugnacious Yankee schoolmarm. She staked her claim. Gates happened to stake the same quarter-section. That started the fight. Now when a claim is contested, the claimant who has put up a shack and broken ground first stands the best show; so as soon as they had filed, Gates and Miss Johnson went tearing back to the claim to begin operations. She took a workman with her, and they knocked up a shack at the southwest corner of the claim. Gates ran his up on the northwest corner. He had to pass the other shack on his way to town.

"She had some horses and began ploughing. So did Gates. She hated him like poison. He made the air blue every time he thought of her. The contest dragged along. Those things last forever down here. Every day the two parties got more bitter. There wasn't anything too bad for one to say about the other. When she got up in the morning she looked at the smoke coming out of his chimney, and talked to herself in a way that would have made her Yankee ancestors shiver. While he ate breakfast he looked across at her shack and said things that weren't fit for publication. Hating each other was their chief occupation. Between times they ploughed.

"One morning Miss Johnson got up and looked over at her enemy's shack. There wasn't any smoke. The next morning the same thing happened. She knew Gates hadn't gone away, because if he had he'd have passed her place. The third morning came. No smoke. Miss Johnson's curiosity fairly sizzled. It was too much for her. She put on her boots and went across to the enemy's camp. There wasn't any noise about the place. She stopped at the door and listened. Not a sound. She tried the door-knob. It turned, and the door opened. She pushed the door and looked in. There was only one room to the shack. On the side of the room opposite the door was a cot. On the cot was a man. He was tossing and turning. His cheeks were crimson. His eyes had a sort of vacant stare.

"Miss Johnson stood holding the door and watched the man. He didn't pay any attention to her. By and by she went into the room, walked over to him, and felt his head. He was burning up with fever, and didn't notice her at all. She looked around the room. Everything was in an awful mess.

"She stood and bit her lip for a minute. That's a way she has. Then she came to a conclusion and trotted over to her shack. Pretty soon she hurried back with a medicine chest, gave the sick man some medicine, rolled up her sleeves, and waded into that room. When it was tidy she put wet cloths on Gates's head, and gave him some more medicine. Night came along, and she rolled herself in a blanket and slept on the floor. The next day she made gruel for the sick man, and kept on with the medicine. She kept that up for four days, going home only long enough to tend to the horses and cow.

"On the fifth day Gates opened his eyes, and saw out of them. She was standing by him, and when he saw her he swore feebly. She set her lips.

"'You shan't die on my land,' she said.

"'It's my land, and I'll die on it if I d—— please,' snarled Gates. Then he fainted.

"That was the situation for two weeks. The woman won out. A man's stubbornness ain't any match for a woman's. Miss Johnson wouldn't let Gates die on her land. He tried to assert his rights and do it, but he couldn't. She nursed him back to life, but they wouldn't speak to each other. When he was getting well, but couldn't do anything for himself, he used to watch her and grin sometimes. Then he would scowl.

"At last he was able to get up. She went home. That afternoon he walked in at her door.

"'I reckon you won't give up this claim?' he said.

"'No. Will you?'

"'I'd see you in —— first, but will you marry me?'

"'It's a good deal the same thing for me, ain't it?' asked Miss Johnson.

"Still she married him. That's the way that contest was quashed, and they're as happy as turtle doves."

"It's a funny country," mused the red-haired girl.

"It's all that," agreed the men.

A dilapidated cart, drawn by a phantom horse, wandered down the street and stopped in front of the lumber office. In it were a

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dignified Indian, in gay raiment; a shrinking, frightened-faced squaw, wrapped in a blanket, and a scantily-clad Indian baby. The old Indian climbed out of the wagon. As he left, the pappoose wailed shrilly, and the fond father cuffed it over the head. Then he disappeared into the office.

"Old Lone Tree," explained the gambler. "He's the meanest Indian unhung. He'll lie and steal and murder, and beat his wife, and do it all with imperturbable dignity. He's a Government pet, and always comes out on top. You can shoot a white man down here, and not hear much about it; but wipe one of those dirty, vicious Indians off the earth, and you'll set the whole machinery of the Government working. Don't talk to me about the noble red man."

"Slim Jim gave Lone Tree that scar on his cheek," the sheriff added.

"The tightest hole Jim was ever in was three years ago, when six Indians held him up fifteen miles out on the Creek road. Even a drunken Injun ought to have known better. Three braves were gathered to their fathers, and three more were laid up for weeks. There was a big fuss about it, but it was finally decided that Jim shot in self-defence."

The office-door opened. Old Lone Tree stalked into the yard and across to the lumber pile where the red-haired girl sat. He looked her over calmly, while she blushed.

"How?" he grunted.

The two men nodded coolly. Lone Tree sat down on the lumber and smoked his pipe, looking superbly reserved and dignified. He was spectacular, but a barrier to conversation. The Indians in Oklahoma are picturesque, but not inspiring. They shake one's faith in Longfellow and Cooper. They are dirty, ill-smelling, thieving, brutal; yet with it all they do, at times, look the part.

Lone Tree finished his pipe in silence. Then he made another exhaustive survey of Wilson's sister, and nodded. She wasn't sure whether the nod expressed approval, but she offered him a smile at a venture. He accepted it without any sign of appreciation.

"Day," he grunted solemnly, and went away.

As he climbed into the wagon the pappoose once more gave a frightened cry, and Lone Tree struck the little one a brutal blow with his whip. The squaw moaned like an animal in pain, gathered her baby in her arms, and sat huddled in the bottom of the wagon, while her lord and master, statuesque, serene, drove away into the sunset.

"Some day I shall kill an Indian," said Tom Bailey quietly. "I feel it coming on."

The red-haired girl's education went on apace. One day she was invited to a meeting of the Woman's Club, and found it uncommonly like Sorosis, though, sartorially, not quite up to the standard of the mother club.

A frightened little woman read a long paper upon Icelandic literature, spelling all the names, because, as she explained, no one could by any possibility pronounce them. Then there was a discussion upon corporal punishment for children, which became so animated that only the strategic genius of the president prevented its ending fatally. Sandwiches and chocolate smoothed the troubled waters, and Dick Wilson's sister escaped. It was depressing to find that even Oklahoma could not furnish new color effects to woman's clubdom.

At the lumber yard she found the sheriff, Tom Bailey, and Dick loafing tranquilly. It was a relief after a glimpse of the strenuous life. They moved along and made room for her on the lumber pile. She sat down and sighed for sheer satisfaction. After that she asked a question that had been bothering her.

"Why Bluffville? There aren't any bluffs."

The three men looked lazily at each other. Each hoped one of the other would assume the effort of explaining. The sheriff finally came to the front.

"Didn't you ever hear how the town came to be here? We called the railroad's bluff. Some of the sooners staked it out and nabbed town lots. The railroad company decided to locate its town nine miles east, and not stop here. Then there was a fight. The trains had to be stopped here, and the boys stopped them. They tore up track and broke up bridges. The railroad company sent a posse down to guard things. Some of the boys engaged the posse up at the north bridge while the rest of the boys blew up the south bridge. One night they moved a house, and set it squarely on the track. The engineer of the express train didn't see it until he was almost on it; so he threw his throttle wide and ploughed

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"THE MONTH'S VISIT CAME TO AN END ONE OCTOBER DAY. . . . SHE FINDS NEW YORK SLOW."

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right through the house. The engine never left the track, but it looked more or less like thirty cents afterward, and the passengers were scared.

"People wouldn't ride on the trains, and the trainmen wouldn't run them, so the railroad company had to give in. It ought to have known better than to buck up against a crowd of Oklahoma boomers."

"How long ago was all that?"

"Five years. We celebrated the town's fifth birthday last summer, spent five thousand dollars—everything wide open, fireworks till you couldn't rest, circus, balloon ascension, show at the Opera House, four deaths from pistol shots, scores of black eyes, drunks in bunches of twenty-five. It was a great occasion. Sorry you weren't here."

"Some day the bottom will fall out of this boom," prophesied the gambler.

"That's right," assented Dick. "We draw from 75 miles east and 150 miles west now, but a railroad will cut in somewhere, and we'll go out like a candle. It's a great town now, though."

"Good place for a man in my profession." The gambler's tone had a touch of self-disgust in it.

"Why, why, wh—" The red-haired girl looked embarrassed.

"Why do I follow my profession?" finished the gambler cheerfully. "Well, why not? I'm on the square. My word's my bond, and the boys know it. It's all a gamble, in one way or another, and I'm not sure but what the avowed gambler is the only really honest man in the bunch."

The month's visit came to an end one October day. The red-haired girl kissed her brother tearfully, while all the by-standers turned their backs and diligently studied the landscape.

Then she shook hands with a large and varied assortment of men, among them Old Lone Tree, who eyed her stolidly, and grunted "Day," but who had ridden twenty miles to make the eloquent remark.

Tom Bailey was the last man to step up. His face wore the expression that he usually reserved for a raise on a pair of deuces. A habit of bluffing calmly stands a man in good stead on some occasions.

"You've been very good," said the red-haired girl.

"Yes, I've been good. I'll probably make up for it."

Not a muscle of his face stirred, but that night he rode his pony fifty miles for no apparent purpose.

On the train the red-haired girl met the Congressman.

"It's a wonderful country," he said.

"It is," she agreed.

"Such crops," mused the Congressman.

"Such men," sighed the girl. She finds New York slow.

"THE RED-HAIRED GIRL KISSED HER BROTHER TEARFULLY, WHILE ALL THE BY-STANDERS TURNED THEIR BACKS AND DILIGENTLY STUDIED THE LANDSCAPE."

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DR. BÜTSCHLI EXPLAINING HIS ARTIFICIAL PROTOPLASM TO THE STUDENTS OF HEIDELBERG UNIVERSITY.

WHAT IS LIFE?

The "Vital Principle" apparently proved by Modern Science to be not a Mysterious Fluid or Essence—Dr. Bütschli and his Wonderful Artificial Protoplasm which acts strangely like that of Living Bodies.

By Arthur E. Bostwick, Ph.D.

A STRIKING museum exhibit is that of the elements that go to make up the human body, in their exact quantity and proportion. As one stands before the row of bottles containing water, charcoal, lime, phosphorus, and so on, it is impossible not to speculate on the vastness of the difference between the substance of their contents and that of the spectator's body. Take them from their receptacles and mix them. Will a man result? Not even a dead one, much less a living one. Then there is something in a man that has been left out of the exhibit. What is it?

Water is composed of oxygen and hydrogen gases. Yet you cannot manufacture the liquid by mixing the two gases. They must combine chemically, and this they will do only at a high temperature. In other words, the conditions must be right before the compound can be formed. So it is with all compounds, however complex. In some cases chemists have not found out what the requisite conditions are, until after years of patient experiment; in others, they are working yet. Will they ever discover the conditions under which the living cell may be built up out of inert matter?

Now this very question is ridiculous to those who believe that life is an essence or a principle of some kind, and that living matter is simply dead matter with this essence added to it. If this be true, we already know the condition and have only to capture the principle. But the vital spark has hitherto been elusive, and its very existence is growing more and more doubtful.

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It should be remembered that in the earlier and cruder attempts to explain nature, a favorite method was to imagine various essences and principles to account for natural phenomena, a method which really explained nothing. Molière made fun of this by creating his pompous doctor who explained in sonorous Latin that opium puts people to sleep because it possesses a "sleep-giving property." The phenomena of heat were once ascribed to a supposed fluid called "caloric"; they are now known to be due to the rapid motion of the molecules of matter. Light was in like manner believed to be a stream of material particles; it is now recognized as a wave phenomenon. The idea of a vital principle is believed by many persons to belong to the same old order, and they would replace it by one more in accordance with modern science. Some of them even believe that the properties supposed to be peculiar to living beings are present in some degree even in dead matter. An elastic wire is not so "springy" the thousandth time it is released as it was the first time. Here, they say, is primitive fatigue. A piece of metal subjected to various stresses retains the evidences of them in its structure; and their character and order affect its subsequent motions and behavior. Here, they say, is primitive memory. A recent investigator even thinks that some substances show evidences of that protective coloration and mimicry which have played so important a part in the evolution of insects, birds, and animals, and which have been regarded as peculiar to the world of life.

THE DIFFERENCE BETWEEN DEATH AND LIFE.

ACCORDING to this view we must regard all matter as alive, or, rather, we must regard the distinction between "live" and "dead" matter as popular rather than scientific. Matter is simply more or less highly organized—that is all. As we go up in the world of nature, structure becomes more and more complex, and function wider and wider. If this view is correct, there is no inherent reason why the chemist should not give us compounds or mixtures that will exhibit still more closely the properties of life than our metal wires do with their germs of fatigue and memory. More than one chemist has worked along these lines, and at least one thinks he has succeeded.

What is the characteristic feature of a living being? The answer to this question is harder than it seems at first sight. Is it the possession of a regular and beautiful form? Then certainly the frost crystals on a window-pane must be alive, while the lower forms of marine creatures are not. Is the power of growth the criterion? The frost crystal grows as well as the fern. Is it that the living body is a system capable of absorbing and giving out energy and thereby performing useful work? Then a steam-engine lives. In like manner we may test and reject all the definitions that have been proposed. Yet there are certain features common to all such matter as is usually spoken of as "living," and among these the most conspicuous is the kind of material of which they are chiefly composed.

THE LIVING BEING.

EVERY living thing, simple or complex, plant or animal, bacillus or man, is made up of cells, and these cells consist largely of a slimy substance called protoplasm, which is so universally present in living nature, and plays so important a part in vital processes, that it was described by Huxley as "the physical basis of life." The first observers thought it a definite chemical compound, and they believed that if this compound could be made in the laboratory, the great abyss between dead and live matter would be bridged. Now it is known that protoplasm is not merely a chemical compound, but has organic structure. As early as 1867 this was described as like a network, and some biologists still consider this as accurate. Others have regarded it as more like a complex tangle of fibres, and a few think that it is a smooth jelly in which are imbedded granules, which they regard as vital units. These different ideas are due to the difficulty of microscopical study. All have now agreed, however, that protoplasm has a structure, and consists essentially of a framework of some kind filled with a soft or liquid substance. Whether the phenomenon of life depends on the one rather than the other, and if so, on which one, are unsolved questions. If the living cell is really such a complicated affair, of course there is no use in trying to imitate it artificially. But many observers now hold that the complication is in the microscope rather than in the protoplasm, and

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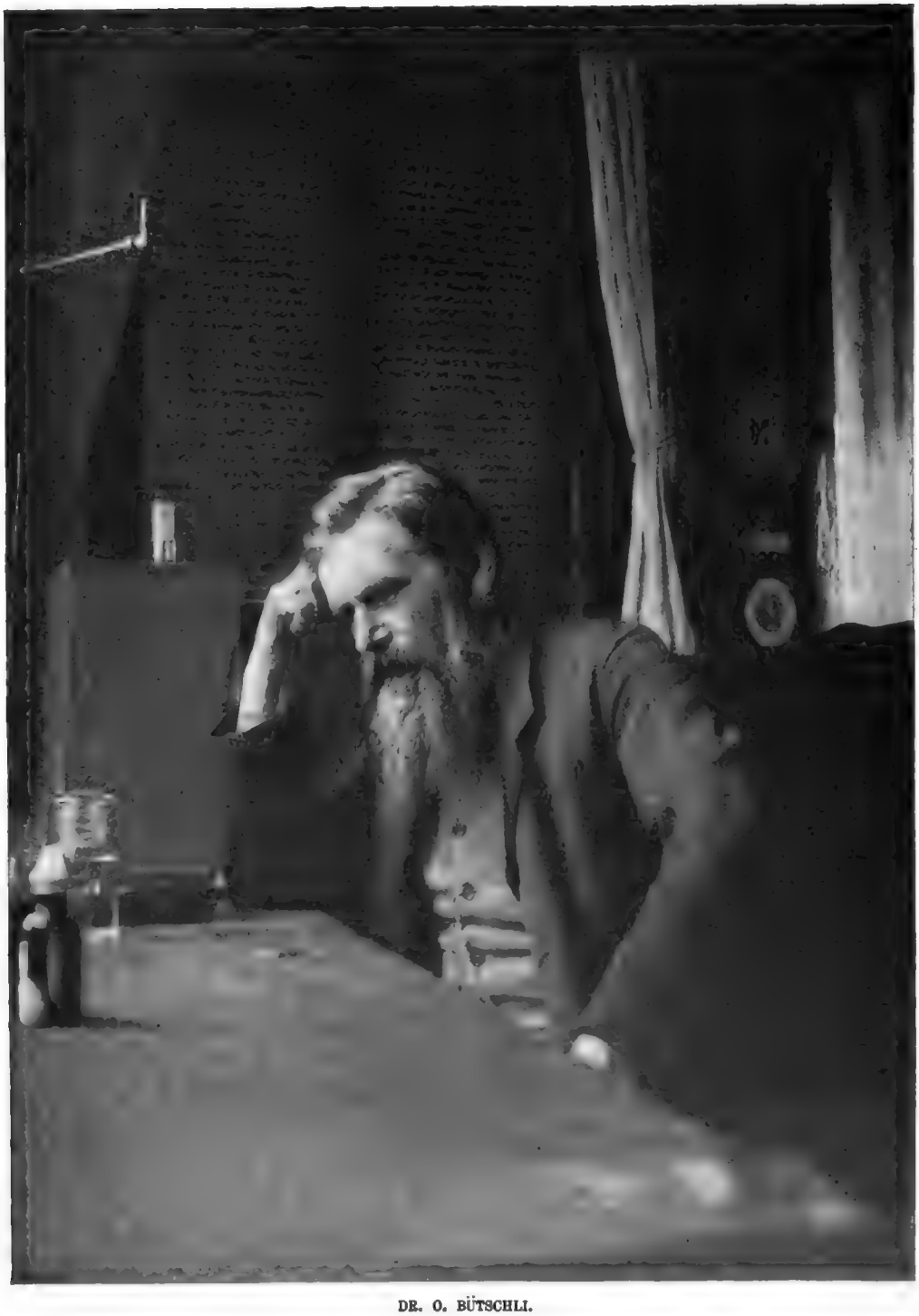

DR. O. BÜTSCHLI.

Professor of Zoölogy in the University of Heidelberg.

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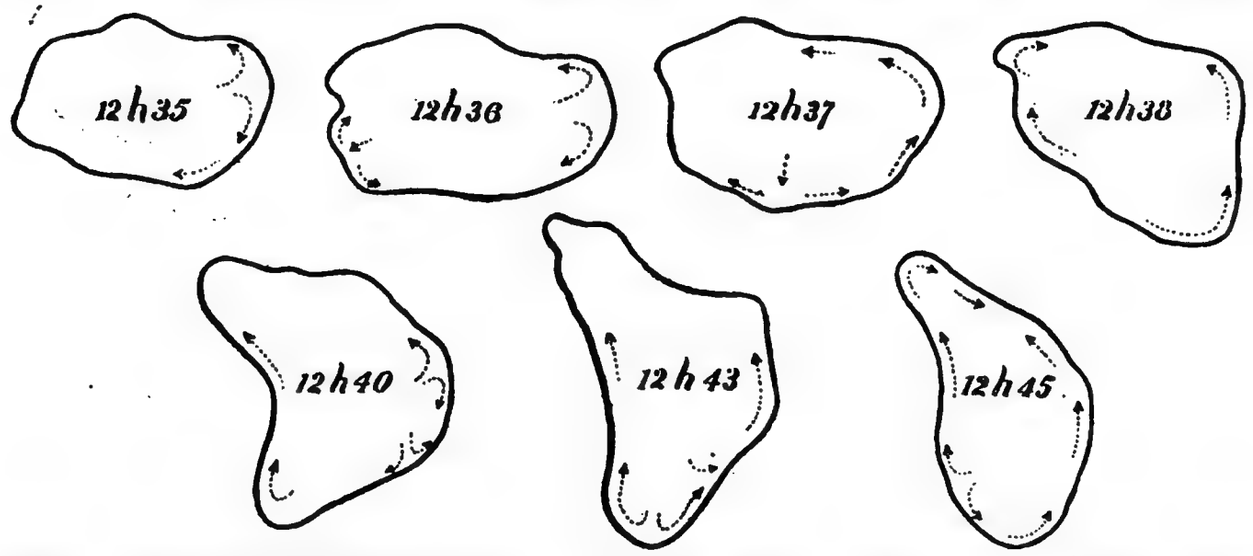
that the latter is really only a sort of fine lather, the drops or bubbles of which, closely pressed together, appear through the instrument as a complex network. The chief advocate of this view is Dr. O. Bütschli, professor of zoölogy in the famous German University of Heidelberg, who has made himself also famous by his demonstration that the conditions of the phenomenon called life are in much larger degree purely physical than could have been supposed possible. He has, in short, succeeded in manufacturing artificial protoplasm, or at any rate a very good imitation of it.



DROPS OF SOAPY WATER ENTANGLED IN OLIVE OIL, WHICH LOOK AND ACT VERY LIKE THE "PHYSICAL BASIS OF LIFE."

Outline sketches showing the different form assumed at the expiration of each minute by a drop of oil-foam when warmed to moving activity, during a period of ten minutes. Arrows denote extension-currents.

HOW TO MAKE AN ARTIFICIAL "PHYSICAL BASIS OF LIFE."

DR. BÜTSCHLI had been struck with the similarity of protoplasm to a fine froth. The commonest froth, soap-lather, consists of minute air bubbles entangled in a soap solution. Bütschli, after long and patient experiment, succeeded in making what he calls an oil-foam, consisting of minute drops of soapy water entangled in olive oil. These drops are so small that they can be seen only under the microscope, and the appearance of the lather thus obtained is very like that of the "physical basis of life."

"I have often placed preparations of the foam," says Bütschli, "before some of my colleagues, who were themselves not inexperienced in the investigation of protoplasmic structures, and . . . asked them what they believed the object to be which they were shown, and of the nature of which they were quite ignorant. One of them guessed it to be an egg cell, another thought it was rhizopod protoplasm or something of the sort."

But the similarity goes further than mere outside resemblance. The drops of oil-foam act as if they were alive. "During frequent observation of the processes of movement in *Pelomyxa* [a minute jelly-like marine creature] I was invariably astonished," says the investigator, "by the perfectly complete agreement of its movements, even in detail, with those of the drops of oil-lather."

When a drop of oil-foam is placed under a microscope and carefully washed with water it immediately begins to crawl about —at least that is what we should call it if the drop were alive. "The movements of the drops of foam, when free from pressure and hence quite opaque," says Bütschli in describing what they do, "take place in such a manner that without any striking change of shape they creep somewhat rapidly backwards and forwards under the cover glass. At the same time the direction of movement changes fairly often, though it sometimes happens that a drop may retain for a long time, or permanently, the direction of movement it has once taken up."

As has been said above, there is little change of form in these creepy, slimy, artificial jelly-fish; that is in accord with their general resemblance to living bodies. There

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is, however, the slight change that is constantly taking place in any living creature—a lengthening out in the direction of the forward movement, such as we might see in a worm, and a bulging out here and there on the edge. Opaque as the drops are, they can be seen under the microscope to be the seat of a very lively circulation—here again they are like living beings. To quote again from the description of their manufacturer:

"Every bulging out of the edge is accompanied by a stream which starts from the interior and spreads out on the surface; the creeping, progressive movements are, without doubt, in connection with such streamings. . . .

"If the water be slowly replaced by semi-dilute glycerine, a system of very energetic circulating currents is gradually set up."

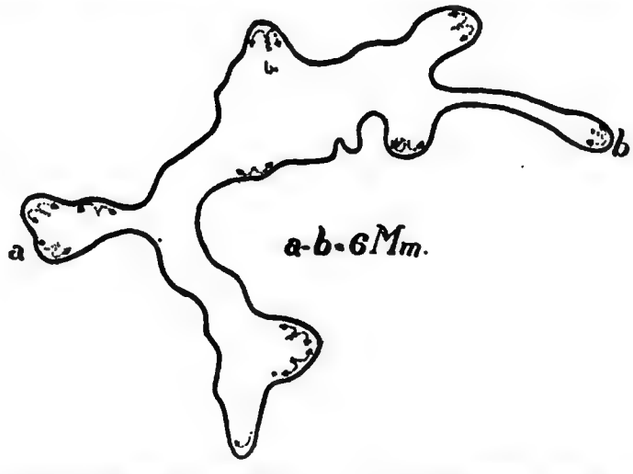
All these movements described by the German professor are most strikingly like those of life as observed in the small jelly-like marine creatures of the lower orders. The drops sometimes move as fast as half an inch a minute—not railroad speed by any means, but very swift progress when we consider their size and conditions.

Sometimes a drop would run quickly toward one of the strips of glass employed as supports; indeed, such foreign bodies seemed to attract the drops. If they had been really living creatures one would have said that they were on an investigating expedition. The behavior of neighboring drops is still more curious. They seem inclined to run toward one another, and when they touch each other the streaming or circulation phenomena become much more noticeable. Large drops develop subordinate centres of circulation and push out long arms like tentacles. In the amœbas, jelly-like microscopic creatures, this same process goes on and the arms are called *pseudopia*—false feet. Sometimes one of the subordinate centres separates from the mother drop and goes off by itself, thus recalling in a striking manner the phenomenon of reproduction by division, common in many of the lower orders of life.

The drops do not remain "alive" indefinitely any more than do creatures that are really alive. Sooner or later their activity comes to an end and they "die." Successfully manufactured drops keep up their motion for twenty-four hours or longer, sometimes for two or three days, and Bütschli reports that one drop "lived" from May 28th to June 3, 1889—six days. The larger the mass of artificial protoplasm, the longer its life. So, too, the elephant lives longer than man, and man than the dog, although this analogy, of course, cannot be carried too far.

WARMTH AND ELECTRICITY AFFECT THE ARTIFICIAL PROTOPLASM IN THE SAME WAY AS THEY DO LIVING MATTER.

EVERY one knows how warmth increases the activity of living things. The same is true of artificial protoplasm. If the drops are heated their streaming or circulatory internal motions become quicker and more intense, and even drops that have apparently "died," or come to rest, may be given a new lease of life in the same way. Bütschli also believes that the drops are sensitive to light, but his experiments on this point appear hardly decisive. Electricity, which has so marked an effect on living matter, has also its influence on the artificial protoplasm, the drops extending toward the positive pole when a current is passed through them, and reacting noticeably to a sudden shock.



OUTLINE SKETCH SHOWING ONE OF THE FORMS ASSUMED BY A LARGE DROP OF OIL-FOAM IN ACTIVE MOVEMENT.

The pairs of dotted arrows represent eleven centres of extension-currents. The "false foot" at *b* is nearly ready to break off and form an independent drop in the direction of its extension-currents.

Now Bütschli has no wish to make a mystery of all these movements. His desire is not to endow his oil drops with "vital force" in identifying their behavior with that of living creatures, but rather to explain the movements of the latter in the simplest man-

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ner possible. He has found out what makes his oil-foam so lively; he believes that the activity of living protoplasm is due to like forces.

In order to understand why the drops act as if they were alive, we must remember that currents arise in a liquid when its surface is interfered with by bringing any liquid of a certain class into contact with it.

Such movements are observed in a drop of oil when weak, soapy water is brought close to it. Radiating currents begin to move in the drop even before the soap touches it. The drop also moves in the direction of the soapy water. These motions belong to the class of phenomena usually known as "capillary," such as the rise of water in a small tube, etc., which depend on the relative attraction of the molecules in the same and different substances. They can be explained in detail, but the main point to be dwelt upon here is that they are purely physical, as much so as the fall of an apple to the ground.

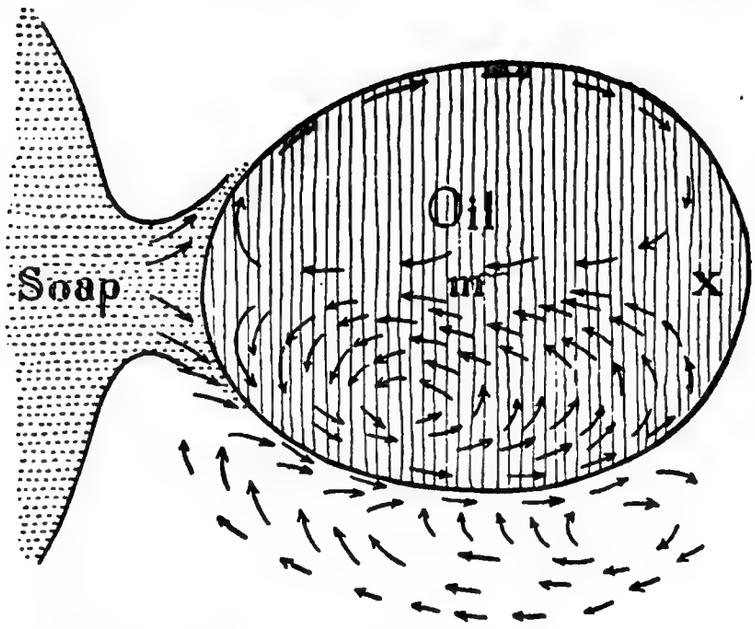

DIAGRAM SHOWING THE SYSTEM OF EXTENSION-CURRENTS PRODUCED IN A DROP OF OIL PLACED IN WATER UNDER THE COVER-GLASS WHEN APPROACHED ON ONE SIDE BY A SOAP SOLUTION.

Arrows denote the currents, *m* the axial quiescent streak, *x* the posterior quiescent region.

In the oil-foams we have the same phenomena on a more complex scale, each tiny mass consisting of thousands of drops of soapy water in contact with oil. Bütschli has succeeded in explaining the internal circulation, the change of shape, the pushing forth of tentacles, the division, and the effect upon all this of heat and electricity. It is his contention that exactly the same explanation applies to living protoplasm, since it is made on precisely the same plan as the oil-foam, although, of course, with different materials. He has even gone further, and claims that muscular contraction, which is the means of all movement in the higher animals, and even in man, is essentially of the same nature. In other words, the dumb-bell lifted by the athlete, or the brush in the hand of the painter, are put in motion by capillary action that takes place in the minute cells forming the muscular tissue of the one or the other.

CRITICISMS AND CLAIMS.

IT was not to be expected that such a view as this should be without critics. One biologist has sneered at Bütschli's foam drops as being of no more real use to science than the knowledge that an umbrella is shaped like a jelly-fish; to which the investigator has very properly responded that if jelly-fishes were made of silk with steel ribs the knowledge that a similar structure could be formed by the hand of man would indeed be interesting and valuable. Other critics have suggested that there is no reason why all protoplasm should be alike, and that there may be various kinds in different cells. Indeed, students have used the word itself, sometimes to mean the whole cell-substance, sometimes for the "living" part of it, and sometimes for the hypothetical portion that is the real "basis of life." But when all is said and done, Bütschli has certainly made a substance which is so like protoplasm in appearance that experts cannot tell them apart, and he has shown that in this substance movements take place from purely physical causes that are almost precisely the same as those made by the lower animal organisms and ascribed in them to a "vital force." He has not claimed that he has constructed the real physical basis of life, because protoplasm is not made up of oil and water, but of complex albuminoids; but he does claim to have shown that the primary movements of life may be due to structure, and that there is no necessity of believing in any peculiar vital essence or force.

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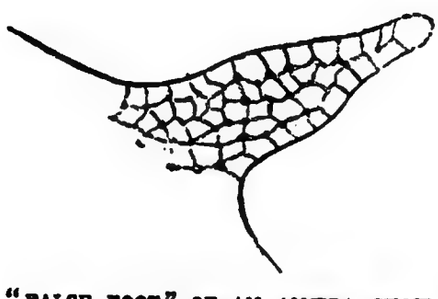
THE SUBJECT OF REPRODUCTION.

ONE of the most notable characteristics of living beings is that they can reproduce their kind. In the lower orders this is often done by fission—splitting up. The original creature breaks in two, and each of its parts becomes a new organic unit. In such reproduction there is neither parent nor child; or perhaps we should say that the children are identical with the parent, as the sum of the parts is equal to the whole. We have seen that this primitive form of reproduction is imitated in a striking manner by Bütschli's drops of artificial protoplasm. A little higher up in the scale of life the part that separates is always inferior to the part that remains. The latter retains its identity and becomes a parent, while the separated parts are distinctly its offspring. Still higher up, the cells thrown off by the mother-organism are not strong enough to live by themselves. To acquire that strength, they must be united with the cells of another organism of the same kind. In other words, among the higher animals the production of offspring requires not only a mother but a father.

Now close upon the discovery that we can make an artificial protoplasm that will reproduce by fission comes the announcement that in certain cases a chemical compound may be made to take the place of one of the parent cells in double reproduction. This has been proved by the experiments made on the eggs of sea-urchins by Professor Loeb of the University of Chicago. These creatures ordinarily require a male and female parent for reproduction, but the professor has found that by treating the unfertilized egg with sea-water, or with solutions of the salts found in sea-water, he can fertilize them and cause them to produce young. Of course it does not necessarily follow that because the egg has been chemically stimulated so that it will hatch, the process is the same as when it is physiologically stimulated. In fact, if the belief is correct that fertilization involves not so much stimulation of the mother-cell as it does the actual union of the two parent cells, Professor Loeb's artificial fertilization must be a different thing from the natural process. He has simply found the way to strengthen the mother cell so that it can develop alone, precisely as it does naturally in still lower grades of life. Speculation about the meaning of Professor Loeb's discovery, and about whether it may be extended to still higher classes of life has found extensive place in the public press.



"FALSE FOOT" OF AN AMŒBA, SHOWING HONEYCOMB STRUCTURE OF PROTOPLASM.

LARGE PSEUDOPODIUM OR "FALSE FOOT" WITH NUMEROUS FINE BRANCHES SHOWING FIBROUS STRUCTURE.

Figured after fixing with picro-sulphuric acid and staining with Delafield's Hæmotoxylin.

Here we have simply to note that when all is said and done, we see in this experiment a mere chemical substance, not even possessing an imitation of organic structure, successfully taking the place of one of the living cells in a process that lies at the very foundation of life. In a way this is a confirmation of the idea that those processes called "vital" depend in no manner on a mysterious vital fluid or force, but on the chemical or physical make-up of the bodies that exhibit the phenomena of life.

But this is materialism! Is it? To some of those who have studied the subject it seems rather a step away from materialism.

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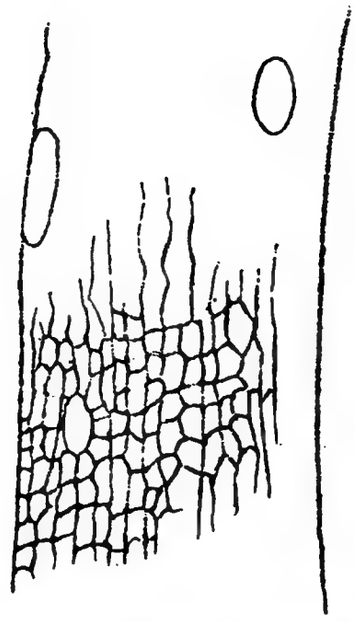
DOES LIFE DEPEND UPON FORM OR MATTER ?

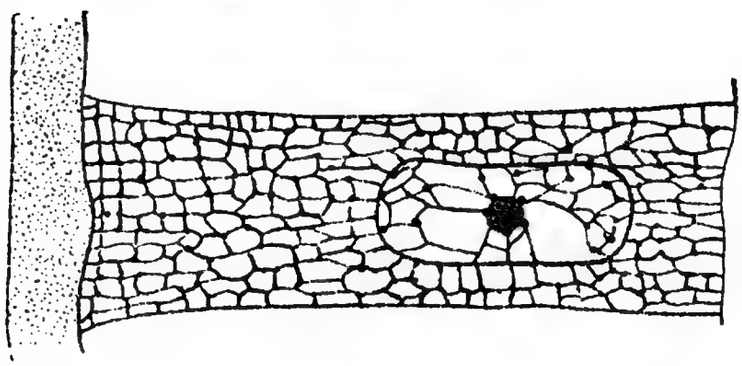
IF life is an essence or principle of some sort, however subtle, which pervades the body and flies away at death, we are at least using the analogy of matter in getting an idea of it. But if it is dependent on chemical or physical constitution, on the combination and arrangement of atoms or particles, there is nothing material about it. The wood or brick that forms your house is material, but the shape and structure are ideal. They existed in the mind of the architect before carpenter or mason had laid hand to tool. The idea that life depends in some way on the architect's plan of our bodily dwelling rather than on some part of its constituent elements is surely not materialism, whatever else it may be. But this is philosophy, and may lead us too far afield.



SMALL SECTION OF A STRAND OF OIL-FOAM, SHOWING DISTINCTLY THE HONEYCOMBED STRUCTURE.

Compare this with a cell beneath the skin of earthworm.

It would be wrong to leave the subject here, however, without saying a word to quiet the apprehensions of those good souls who fear that by such speculations and experiments as these the foundations of religious belief are in danger of being sapped. Such fears as these have accompanied every attempt at a rational explanation of natural phenomena. To those who regarded the sun and moon as lights placed in the vault of heaven by the hand of the Creator (in some such fashion as a man might hang a lantern on a post), Galileo was sacrilegious. Our grandfathers, who had been taught in like manner that the Almighty created mountains, rivers, and oceans, exactly as we now see them, were appalled at the impious attempts of the geologists to explain how these features of our globe took on their present forms and positions. And although Darwin lies in Westminster Abbey, there are plenty of good people to-day who regard his explanations of how species of plants and animals came to have their present forms as little less than atheistical. Those who feel in this way will, of course, condemn any attempt to show that life is a natural, rather than a supernatural, phenomenon; but those who have reflected on the history of science will be inclined to smile at their fears.



MAGNIFIED CELL BENEATH SKIN OF EARTHWORM.

Compare this with the specimen of oil-foam shown on this page.

Believers in revelation need not give up their faith because of the biologists. Unbelievers will doubtless continue to scoff, but not on such grounds as these experiments may furnish. As for Science, she is trying to get at the substratum of truth that is tangled up in the web of nature, and surely the truth can hurt nobody.

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THE MAKING OF A COUNTRY HOME.

By J. P. Mowbray ("J. P. M."),

Author of "A Journey to Nature."

CHAPTER X.

RECOMPENSE.

SOME months have elapsed. The making of a country home has been beset with discouragements and difficulties. The winter came with its storms, and shut all the improvements indoors. Mr. Ridabok's hammer has not ceased in all that time. Inch by inch the interior of the home has assumed airs of comfort and security.

One morning in late April Lucy Dennison sat before her new fireplace. Harold stood beside her. She had a roll of something in her arms. The wood-fire smouldered, but the sunlight came at intervals through the bay window as the spring winds shifted the clouds, occasionally giving a long-drawn sigh.

"I know the spring has come," said Harold, "because the skunk cabbages are all green, and the robins are back, and the maple sugar is come at the store, and Mart said he was going to plough, because the frost is all out of the ground."

His mother got up softly and deposited her bundle on a couch in the corner, pulling the screen around to protect it from possible draught. She stood there looking at it with meditative triumph when John came in softly, and putting his arm about her joined in the contemplation.

"She is going to look like you," he said. "That is some comfort. She seems to have arrived with the spring. We ought to call her Violet."

"The violets haven't come yet," said Harold, "only the skunk cabbages."

"Well, it has been a long and dreary winter to you, my dear," said John.

"But nobody thinks of the winter when spring arrives," replied Lucy.

"I hope we shall not get any late frosts. I suppose you have heard of winter lingering in the lap of spring."

Lucy got up, and taking the sleeping bundle off the couch, put it in her husband's arms. "Let us try and think of spring lingering in the lap of winter," she said, "and speak softly."

Then she poked the logs, and sitting down again, said, "What a lucky thing it was for us that I did come back with you when you got that telegram from Kate saying I was sick. Now that I think of it all, it looks as if it was providential that I went to the city with Wes and his wife and tried to be as gay as I could."

John was walking up and down with his bundle. "I thought at the time," he said, "that it would have been more providential to have stayed home and helped me out."

"I didn't know enough, John. You have always given me credit for knowing a great deal more than I really do. I had to learn a very important lesson."

John put the baby back on the couch and said carelessly, "Well, if you learned it, it's all right. Don't let's talk about it. We have both learned a good many lessons, and I think we've won our fight. At all events we have got a home over our heads, and you are not only the mother of a family, but the mistress of the best house on this road, if Ridabok and I do say it."

"But, John, I never could have appreciated it if I had not learned what it was to be without a home, and Kate Ellis never ceased to instil that lesson into me. I discovered that there are some women who are incapable of understanding what a home means. We all get the credit of being born domestic. But the best of us, I guess, have to learn it like our other lessons. I must have been a dreadfully giddy thing when you first married me."

"Oh, but think of me. What a dull, mechanical, methodical chump I must have been to a lively girl."

"So you were, but it is that has saved us."

"I think you are giving me too much credit. The rest of the family is entitled to some of it—that bundle, for example," and he pointed to the couch. "I knew you would come out all right if you stayed with

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Kate long enough. Almost anybody would, unless he married her."

"Poor Kate!" said Lucy. "She is living in furnished apartments now."

"And her husband is travelling all the time," added John. "He has got to be a second-class drummer."

"He isn't travelling now. He is home and sick."

"Oh, you have heard from them."

"Indirectly. Sprague got a letter from Holcomb. I shouldn't wonder if they were hard up."

"No," said John carelessly, as he went to the window and looked out, "I don't think anybody would wonder at that who knew them."

"John, I have a great mind to ask them up on a visit. I thought that as Kate taught me a lesson I might teach her one."

"Don't," said John. "She doesn't like children, and it would only interfere with the work."

"But the work is all done. The bathroom is finished, isn't it?"

"Yes, finished this morning."

"And the wainscoting in the new dining-room is dry?"

"Dry as a bone," said John.

"Well, then, we ought to have dinner in it and show it off. You are the strangest man I ever saw. You go on working day after day, and finishing up everything in fine style, and never want to show it off. I have never entertained Kate properly in my life. I should just like to know what she would say to that cherub."

"I know what she will say. She will chuck it under the chin and say it looks like me, which is a lie, and then she will ask you if you have any ice."

"And I will have it, from our own ice-house, and I will heap it on her head as if it were coals of fire. Just think how Tilka will look in a white cap and apron—waiting. I'm just dying to say, 'Tilka, you may bring from the cellar a bottle of that old Burgundy; I think Mrs. Ellis prefers Burgundy.' We *can* have a bottle of old Burgundy in the cellar, John, can't we?"

"Of course we can, if your mother has left any room in the cellar."

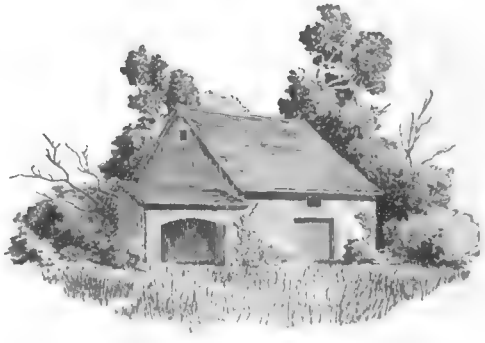
"Then, John, what can be more withering, if the weather is fine, than to say, 'My dear, we are in the habit of driving in the afternoons. Do you care to have the team up?' I just want to avail myself of my privileges and ask Kate how the gas collector is and the janitor, and if the man on the floor below plays the cornet yet, and find out if the restaurant bills are as big as ever."

"My dear, you wish to exercise your fiendish propensity to triumph over the unfortunate."

"But she said that I would get sick of it before the winter was over, and that you were making a dairy maid of me. It's only justice to you to have her up. I really want her to meet Mrs. Swarthout."

"Perhaps Mrs. Swarthout would like to take her to board, then you could run over and see her without having your pillow-slips all burned by cigarettes."

Notwithstanding this conversation Lucy did not invite her old friend. The truth is that both John and his wife were so occupied with their growing possessions that they forgot all about their former acquaintances, who were now moving in a world as far as possible from the practical round of country experiences. But it so happened that without any intention on the part of the Dennisons, the old friends came together once more for the last time, and the meeting resulted in a way that none of them could have anticipated, and only served to show that it is character that makes environment, and not, as so many of us suppose, environment that makes character.



THE BARN.

Late in the summer Sprague and May Braddock were married, and John had been the best man, Holcomb being somewhere in the West with a comic opera company. It was a very quiet affair in the village church, Mr. Braddock giving away the bride, with the back of his hand to his mouth to suppress his sense of humor, and then the

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THE HOUSE BEFORE ALTERATIONS WERE BEGUN.

couple went off somewhere for a fortnight. While they were gone John obtained an option from Pop Swarthout on five adjoining acres for a thousand dollars, and when Sprague came back full of a building scheme, and desiring to put up a house next to his friend, John sold him the piece of land for fifteen hundred dollars. Afterward, when John paid off his mortgage with the profit, Pop Swarthout put his hand on his shoulder and said:

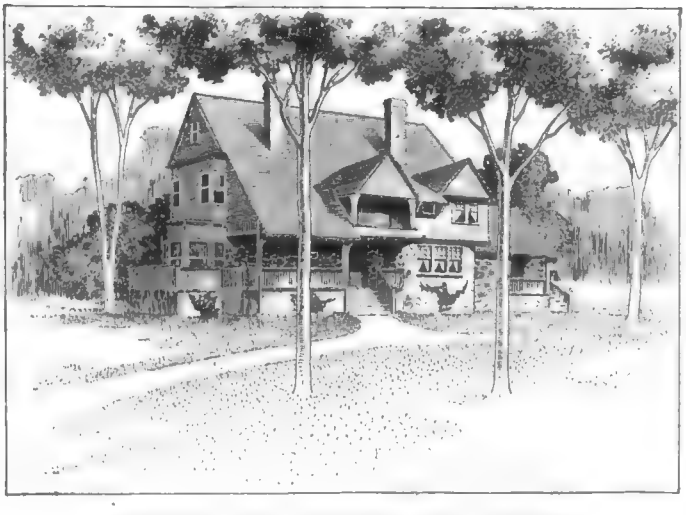
"Young man, I don't often miss my calkerlations, but when I do, I don't hesitate to own up. You fooled me. I figgered you was like the rest of 'em, and was goin' off half-cocked. I guess I was a dum-gormed old turtle, but you ken hev any ten acres I've got for the same figger. I say that to show my respect for your business talents."

It was Sprague, however, who alone brought to the estimation of John's work an artist's keen relish. He invariably looked upon the improvement as if it were the painting of a picture, and was never tired of telling his wife what an extraordinary fellow John was in his plodding way. "Look at that front garden of his," he would say. "It is really the prettiest plot on the road. Strangers ask whose French villa that is in the Italian garden, and there isn't a French or Italian thing about it. Everything in his garden he and his wife picked up in the woods. Instead of buying exotics, he just took the wild azaleas, the bittersweet, the clematis, and the sweetbrier, and stuck those cedars and white birches in by instinct. He makes me ashamed of my profession when I look at his lawns, and I always want to go in and roll under his trees. And the beauty of it all is that the thing keeps slowly growing without any anxiety or clatter or parade. Now he is going to build an addition out of the rest of his stone fence—library and billiard-room, I believe."

John was in the habit of speaking lightly of his achievements. "There was considerably more luck than genius about it," he said to Sprague. "I stumbled on the right kind of a woman to begin with."

"'Stumbled' is lovely," said Sprague. "Did it ever occur to you that she stumbled, too?"

"Then I stumbled on good servants,"



THE HOUSE AFTER ALTERATIONS WERE COMPLETED.

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continued John. "In nine cases out of ten it's the servants that play the deuce with country living. Having got my hand in, as it were, I then stumbled over an exceptionally docile carpenter, who could wait a week or two for his wages if I was pinched, and finally I stumbled on two or three staunch friends up here that played the band for me while I worked."

Sprague said this would not do. "I've been studying this thing," he said, "and I've seen several city folk come up here with good servants and good workmen and good friends, and they generally made a botch of it in a year or two. Heaps of money sunk in landscape gardening, hothouses, city servants, equipages, fancy fowls and dog kennels, roadsters, and a general attempt to bring the city into the country. At the end of a year they complained of miasm, mosquitoes, and bad soil, and dearth of society. Then they sold out at a sacrifice, and hurried back where there was opera and electric cars. It's the old story, Dennison, there's no art or satisfaction in nature, you have to bring those things with you; and most of the people who try the rustic business ought to stay in the suburbs, where they can keep one hand on the telephone and the other on an intelligence office."

"The fact is, Sprague, I didn't have money enough to make any mistakes with. That was another piece of luck. And I was stubborn enough to believe in myself. You are about the only man who could see what I intended to do before I did it, and I haven't done anything that any plodder cannot do. The real reason why more of them do not do it is not because they are not able, but because they are not willing. They don't like the life. Now it occurs to me that you and I ought to make our own society. We shall get two or three more of our own kind around us in time, and that will be all the society we want."

"You knew how to go to work."

"Well, you would think that any man of good sense would know how, but he doesn't. I can sell my house for five thousand dollars. It's insured for that. I'll tell you why. It's the only house on this road of moderate price that has a complete water system. Visitors are amazed to find hot and cold water faucets in my bath-room, and a proper system of drainage. But it's the simplest thing in the world when you have a reservoir. Enterprise is far more bewildering to these people than capital. They are all small capitalists, and they seem to think they never would be if they displayed any enterprise. Look at that highway. It ought to be macadamized. It would improve the property immensely. Do you know what it would cost the township to grade it up and gravel it for two miles?"

"More than the township will pay."

"I think I would take the contract for five thousand dollars. I can buy a stone crusher for fifteen hundred, and I'd put three men at it for a year."

"We'll have to make you supervisor of the county," said Sprague.

But John was not ambitious, and he said he didn't aim at anything higher than roadmaster.

Perhaps Lucy would not have known how far she had drifted from her former city habits and tastes if it had not been for her unexpected meeting with Kate Ellis. In obedience to the doctor's advice to take Wes away from the city and his acquaintances for a month or two, and after finding that her resources were insufficient to pay the bills, Kate consulted with Holcomb, and that chipper young gentleman immediately said, "What's the matter with your old friends the Dennisons? Is there anybody farther from the madding crowd than they are? Is there anybody that needs the freshening and joyousness of your presence as they do?"

"Yes," said Kate, "it's all very well for me, but consider Wes."

"You write and ask her if she knows of a good, quiet, desolate farm-house, and—a box of gloves she'll invite you up. If you say so, I'll go up myself and fix it. Sprague must be aching for me by this time. Do you remember how Dennison's wife used to sing my songs?"

"She has two children now," said Kate.

This sounded as if it were final with respect to Lucy's music. But the upshot of it was that Holcomb went off to the country to reconnoitre, and having reported that everything was all right, Kate herself went up to make a call on Lucy Dennison.

The instant the women came together it was plain to both of them that conventional endearments could not quite bridge the gap that had grown between them, but this fact only made them dispense the endearments more recklessly. Kate kissed her

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old friend and called her dear, but she was conscious of a little effort in it. Lucy thought for the first time that Kate was too pronouncedly dressed. The flaring hat seemed slightly boisterous, and she thought Kate might have wiped some of the powder off her face.

On the other hand, Kate noticed a sober, matronly air in her former associate that she thought was meant to be slightly superior.

"I am so glad I found you," she said. "Wes and I are looking for a quiet, rural home where we can rest for a few days. He is mentally run down, and the doctor says he must not think for a month."

"How nice!" replied Lucy. "I shouldn't wonder if Farmer Van Kleek's over on the Nyack pike would just suit you. He is three miles from the nearest house, and that's a tannery. If I were you I'd write and inquire about it."

This friendly interest stirred something in Kate very like viciousness, but she did not betray it.

"How nicely you are fixed," she said. "Is this the same house that I came to see you in before? What have you done to it?"

"Finished it," replied Lucy. "If you'll stay to lunch, I'll tell Tilka to get you up something. It's too bad, but Mrs. Sprague and I are going to the County Fair at one o'clock, and I can't get out of it. You know we are exhibiting there."

"I'll just write that name of the farmer down," said Kate. "What did you say it was—Van Kleek—on the what?"

"On the Nyack pike."

"What's the pike? A river, I suppose. I like rivers, and pike makes an excellent dish served with mayonnaise."

"Dear me, no. It's the road—the turnpike. Then you will not stay?"

"To lunch? Oh, no, I can't. I just wanted to take a look at you. How you have changed!"

"Yes, it's dreadful. I'm getting so stout. But you keep your figure beautifully. Shall I show you the house? You'll be delighted with our *salon* dining-room. It will seat twenty people at table."

"You don't know of anybody nearer than the pike, do you, who would accommodate us?"

"I can make inquiries for you. What is your city address?"

Kate got up, walked to the window, and bit her lip. What was it had given this salesman's wife such a complacent air of independence? Kate was piqued, and was coming perilously near to retaliation. So she smiled and looked unusually amiable as she said:

"I suppose you have your hands full. What with churning and weeding and nursing, you don't get much time for social duties."

Lucy smiled with an equal amiability. "That's just it, dear," she said. "If it wasn't for people coming in all the time unexpectedly I'd get a great deal more done. Let me show you the baby before you go."

As Kate took the prize Dennison bundle in her arms and patted its cheek with her gloved hands, she said, "What a little beauty! Where are the other children? Oh, they are working, I suppose—and you, you little busy bee"—tapping the bundle with her finger—"I suppose you are going to learn how to make butter and apple sauce and rag carpet."

"There's only one other," said Lucy—"Harold. I think we'll send this one to Bryn Mawr."

"And Harold, he will go to West Point, I suppose."

"Harold is to be a civil engineer; he is to be educated for it, his father says."

"How sweet! I wish there was a school where our sex could be educated to be civil somethings, don't you?"

"Yes, dear, but it's so much harder to educate our sex. They never take things seriously until they have a family."

"And that doesn't always make our sex as considerate as it ought to be."

"It will be too bad if you do not find the quiet place you are in search of," said Lucy.

"My dear," Kate retorted, "you know very well that I detest quiet. It is on Wesley's account that I am anxious. I think a month up here would kill me. It's all very beautiful, but I must have my bath, you know, and telephone, and I never could eat country fare. Besides, dear, I've always held that country life narrows the taste and is apt to make one illiberal—don't you find it so?"

"Yes, I suppose it does," Lucy replied; "but it doesn't narrow one's person, that's the worst of it. If one is to keep her fig-

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ure, I suppose it is absolutely necessary to have worries and uncertainties and disappointments. Sometimes I feel that I shall get horribly fat just because there isn't any."

"But, my dear, if you do get preposterously fleshy, you can exhibit yourself at the County Fair. They offer prizes, don't they, for such things? But perhaps it's only pigs, not persons. I don't know much about it. I used to read about it when I was a girl. Good people in the country always died in a pot of grease—or perhaps it was butter."

"Yes, indeed. We thought those were fairy tales, but the people up here are doing it yet. It's all true."

"Have you seen Holcomb lately?" asked Kate.

"No. He was up here and called, but I did not see him. I was just going out to drive with the children and Mrs. Swarthout, and he would have been very apt to sing one of his songs before the children."

"Heavens," said Kate, "what a narrow escape for the darlings!"

When Kate returned to the city, she left her amiability in installments at every station she passed, and when she reached Wes she was in an undisguised state of indignation.

"They have grown to be a set of rustic prigs," she said. "Don't talk to me any more about the Dennisons. Lucy has got to be as unbearable as her husband, but I can tell you one thing, she has got a home over her head, which I haven't, and I suppose she is entitled to be stuck up. I guess we will have to go our own gait; it isn't theirs."

"Well, my dear, it has been a pretty frisky gait, what we've had of it."

"And what have we got to show for it?"

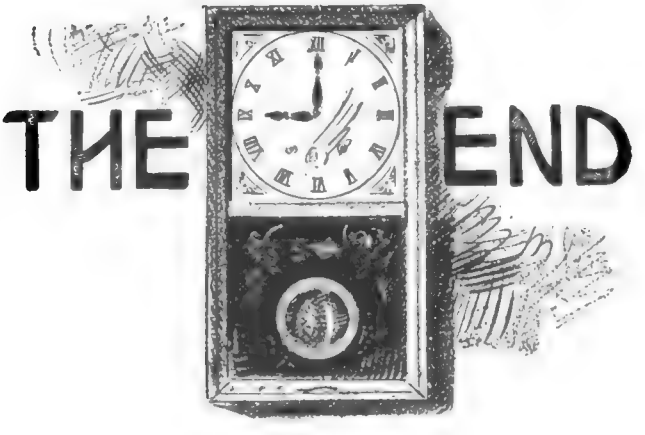
"Oh, say, you've been struck by the land scheme."

"No, I haven't. I've been struck by a woman who has her own home, and is too independent to be bearable."

"And if you had a home, you'd pawn it the first rainy day. But if you think we ought to go in for realty, what's the matter with buying a nice sunny plot at Greenwood Cemetery? I don't believe they will let us keep a cow there, but we might compromise on a goat; and, anyway, you can plant flowers and things and always feel that you've got something snug."

After this the Dennisons and the Ellises never again met. John did hear that Wesley said of him that he was a wasted hayseed. That rather pleased John, and occasionally, when he went to the Astor House Rotunda, he put a wisp of timothy in his mouth and rather ostentatiously dum-gormed the oyster *paté* if it didn't suit him.

But Sprague and a few other persons got to calling him "supervisor," and whether that is an official title or only another of the rural pleasantries, I am blessed if I know.



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ARE THE RICH RESPONSIBLE FOR NEW YORK'S VICE AND CRIME?

By Percy Stickney Grant.

CITIES have been called ulcers. They swell and fester on the surface of human population, which is only healthy in its sparser distribution. They are full of filth, poverty, and vice. They breed criminals. They graduate thieves, murderers, and panderers as naturally as universities graduate scholars.

This is not the worst. Cities not only produce vice and crime, they also consume virtue. More horrible than a disease, they appear like diabolical personalities which subsist upon the strength, health, virtue, and noble aspiration produced in the country. A city is a Moloch, the fagots of its fires are human bodies and souls.

Cities are considered abnormal, therefore, especially to minds keen to beauty, and to hearts easily wrung by the sight of suffering. The truth is, however, that a city is the school of the spirit. Spirit grows in cities by the variety and complexity of human relationship.

Our dealing with the problems of New York will really be governed by our view of the ends cities subserve. If they are ulcers, surgeons are required; but if they are schools of the highest spiritual development, then they need schoolmasters. In one case reform must be the cry, in the other case illumination and progress. Mr. H. G. Wells predicts a future population of forty millions for the city of New York. Does this mean despair of human nature, or the soul's best chance of service and knowledge?

If the city is a school of the spirit, why have the great cities of the past been the seats of a depravity that can never be disassociated from them? Because they have neither seen nor have they fulfilled their higher intention. Cities have been misunderstood and abused. They have been treated as a rich field of plunder for the few, rather than of spiritual relationships for the many.

The shortcomings of New York cannot be laid at the door of any one class. The trouble is a moral one, and all classes are affected. We try to *use* people, rather than to *serve* them. We try to get something out of them, rather than to give them something. The rich, it is true, have greater power than the poor to use men, therefore in bulk of offence they may be the more conspicuous ill-doers. But Fifth

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Avenue has no monopoly of this spirit, and if the East Side were to change places with Murray Hill, I can see in its new owners no new and higher spirit of life that would make Murray Hill a greater spiritual force.

Vice is not a local peculiarity, like overcrowded tenements: it is a personal immorality. Vice, then, depends upon individual character, and is not confined to a class or to a section of a city. There exist, however, certain restrictive agencies intended to control and, if possible, diminish not only the public flaunting of vice, but vice itself. These agencies for suppressing vice are the police, social example, and philanthropies. It is a fair question to ask what the relation is of the rich to these agencies calculated to restrict vice.

VICE FLOURISHES WHILE RICHES INCREASE.

THE rich are almost wholly responsible for the corruption of our police force, and consequently for its break-down as an instrument for restraining vice.

(1) Since both political parties in New York are financially supported by individuals or corporations that expect favors or fear harm from office-holders or from legislation, it is the rich men of New York and not the ignorant voters who are responsible for our bad government. We have not "as good a government as we deserve," but we have as good a government as money can buy. Now the more you pay at the polls the worse the government is. The higher the bribe the worse the service. Moreover, government by corporation influences is impossible. It must reduce itself to a battle between giants, who shelter themselves behind the patriotic devices of great parties while the people perish. The rich are directly responsible for an inefficient police, since they hire the government.

(2) The competition of business and of professional life is so fierce, and the prizes for success in New York so fix the attention of the hardest workers and most competent men that these have no time for politics. The unskilled and less equipped men enter the neglected and deserted field and cultivate it. The politician makes money by cultivating the opportunity of office, just as the business man makes money by neglecting it. Both think of money and not of the city. The business man indeed is, in a way, more culpable. If he is so intent upon gain that he will enjoy the privilege of institutions favorable for his purposes, but will lift no honest finger to protect them, he is morally lower than the man who at least keeps these institutions running—even if he charges a heavy salvage for thus rescuing the abandoned ship of state.

(3) There can be no doubt, too, that the hot pursuit of wealth in New York is a baneful example. We see it politically and socially. The politician is approached for a favor which has a money value for the recipient. Why should he be making other men's fortunes? He therefore asks the question which is the motto of all corruption, "What is there in it for me?" If a rich man may lie about his taxable property, why may not a police captain lie if it is worth his while? At any rate, some of the methods of the rich in securing and protecting their property are openly used as excuses for these corrupt methods which protect vice in New York.

(4) Fifth Avenue takes small interest in the unemployed workingman. Successful business men believe that if a man cannot earn his own living, it is his own fault, and he deserves to suffer. But vagrancy and crime are, to a surprising extent, due to lack of employment. Commitments to Blackwell's Island for disorderly conduct, intoxication, and vagrancy were twice as numerous in January, 1896, during the "hard times," as in January, 1900. The city magistrates almost unanimously concur in believing that vagrants are generally able and willing to work if they could get work, and that many sober and respectable men are committed as vagrants. In 1896 the New York Free Employment Bureau had eight thousand applications from men. It found work for only 444. Instead of more strenuous efforts to meet the needs, the bureau (so far as it attempted to help men) was given up. What a magnificent field for philanthropic gift and organizing ability a great inter-state free employment bureau would be! But nobody, except the Salvation Army, is interested in this cure of crime.

(5) The ability and integrity of a metropolis are continually being drawn upon for the management of great enterprises. The reformer or the interested citizen finds it difficult to consider the vested interests intrusted to him and at the same time consider the city's welfare. He soon forgets

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his independence and becomes dumb to the entreaties of friends who implore his assistance in purifying the government. Suppose he does take part in such movements. The clique he attacks immediately attacks his corporation. Recently a City Government refused a request from the head of a corporation because he had annoyed Tammany. It cost the corporation a sum, the interest on which at four per cent. would have paid the high salary of its president forever. Naturally directors look with disapproval upon outside interests which will cost them so dear. Consequently "the parting of the ways" comes to a patriotic citizen when, under the present usage of politics, he is put at the head of great capital. So vice flourishes while riches increase.

SOME UNREDEEMED PLEDGES OF WEALTH.

THE rich are responsible for much vice in New York which results from the example and influence of their manner of life.

(1) The careless use of money breeds vice and crime. In connection with a hotel robbery in New York a year or two ago, the manager of the hotel said that it was very difficult to find honest hotel servants, especially waiters. They saw so much money squandered on dress, food, and drink that they came to regard the rich as fair prey. They feel towards the rich as a thief feels towards a drunkard asleep in a doorway. "Any property I do not take will be wasted or lost, or will be the spoil of another." This is a frightful impression for the luxurious classes to produce upon a class of their servants.

New York is the city to which, as to a Mecca, the rich from all over the country come. They have put money in their purse, and they are in New York for a good time. Their banners read "Money is no object." "The best is none too good." In addition, moreover, to this large transient population of rich pleasure-seekers, there are the more successful rich from other cities who come here to live. Why do they come here? They do not come as missionaries. They come because New York is a pleasanter place than San Francisco, Butte, Chicago, or Pittsburg. They come for pleasure. But pleasure for the rich is only to be got through wide social connection. The expenditure of these great fortunes that come to New York, with some splendid exceptions, is in the direction of social impression. This spring the shorter purses are crying out at the ravages in prices made by the appearance of Pittsburg fortunes, and the higher figures these new fortunes will pay for clothes, horses, houses, servants, etc.

(2) Remember, too, that few New Yorkers live within sight of their shops, stores, mills, or mines. The human toil associated with the production of wealth, and the pathetic disparity between the lives of his working people and his own luxury, ordinarily restrain a man's extravagance at the mint of his fortunes. This restraint is removed when, as in New York, the sources of wealth are distant, as is the case especially with those who have migrated from the scenes of their successful struggles. Extravagance in New York has not the conscientious check of the memory of toil. The greasy operative, the grimy miner, the sweaty iron worker, the bloody "packer," the panting stoker, can all be forgotten in the evening sheen of Fifth Avenue asphalt, "at the Waldorf," and in the social remoteness of fashionable quarters.

Another thing is to be observed. Since social advantages and pleasures are largely the aim of these migrant fortunes, the city and its affairs are no more thought of than if the owner were in Paris or in Rome. The negative example of neglect of civic responsibility, added to the positive example of vice-breeding waste, seriously accuses the rich of a certain class in New York.

The single point, social life, at which these ambitious fortunes often touch the metropolis has another disadvantage. Their possessors undoubtedly are asked for large gifts at the place where their business is still going on. Whatever may be their response to these appeals, which naturally should be close to their sympathy, they are likely to use these demands as an excuse for inaction toward the general charities of New York. With some splendid exceptions, as I have already said, the immigrant fortunes in New York do not contribute to its higher development, but generally are a source of inferior moral example.

(3) There are one or two other ways, channels of real and harmful influence, by which the rich in New York, in a degree that cannot be said of other cities in America, affect the poor. There is no city in

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the world where all classes of men and women are so well dressed. Such an outward appearance of comfort and even of elegance is not a disadvantage. I recall as almost the most salient and pleasant impression of the first great Sound Money Parade, the sense that 115,000 men in New York, un-uniformed, were marching up Fifth Avenue, all well dressed. Such a manifestation of material prosperity, however imperfect its significance, is unheard of in other lands. When, however, we note, as we are forced to in New York, the extremes of feminine fashion, and its expense; when further we perceive the shop-girls emulating their customers, we at once see opened a range of vicious temptation connected with the effort to secure and to display mock finery.

(4) Another and more direct source of the downfall of working girls is their low wages. Are not the rich, as the great customers of the shops, a good deal responsible for vice that originates in insufficient wages? Cheap goods and "bargains" have a very clear connection with cheap womanhood. An earnest, self-supporting woman of my acquaintance has published a pamphlet, in which she maintains that these low wages paid to shop-girls, and their dependence for situation upon unprincipled "bosses" or managers, are chiefly the cause of vicious supply in New York.

(5) There is another influence not free from its contribution of misunderstanding between classes in New York. This is the effect produced by those who figure as well-to-do in the eyes of the world, but whose relation to servants and tradespeople is marked by closest economy. There are apartments on Fifth Avenue in which the servants' quarters offer bunks in tiers, like berths on a steamer, as beds for servants. Other apartments nearby expect servants to sleep under the sidewalk (a violation of law, I believe). Besides this phase there is another, that of neglected bills. Expensive tailors admit that in their exorbitant charges they have to consider and include the loss from slow accounts, and from those who must wear the best without paying. This effect of the apparently rich upon the poor is decidedly unfavorable. The poor lose money and respect at the same time.

I do not believe that great, strong, healthy America waits for its cue until Newport has spoken, but I can see vicious conditions in New York that are traceable to such habits of the rich as I have just mentioned.

THE ETHICS OF PHILANTHROPY.

THE rich are also responsible for the philanthropic environment of the poor, and the effect of religious and benevolent institutions upon vice.

(1) The great gifts that millionaires make are generally to colleges, schools, and hospitals. The sum total of gifts over a thousand dollars each contributed in America in 1900 foots up to $62,461,304. This is an enormous sum. There are many who think it is much more than the rich in any way should be expected to contribute to charities and philanthropies. The rich men of America who made these gifts no doubt deserve the highest praise. But we should notice that very little of this money finds its way to the slums of great cities, to fight vice in any hand-to-hand fashion. We have seen that vice thrives on low wages, on lack of employment, in crowded tenements, and in the service of luxury and extravagance. The millions given to colleges, schools, and hospitals do not counteract or cure these diseased conditions which are economic and moral. They can be cured in any city which perceives that citizenship means service and not merely use, that it means obligation and not merely opportunity. These conditions do not await a merely mechanical progress for their betterment, but they await the moral awakening and the unselfish coöperation and service of the well-to-do and rich members of the community.

(2) "The philanthropic resources" of New York are mainly active through some fourteen hundred public charities, relief agencies, "homes," reformatories, etc., and through about eight hundred religious orders, churches, congregations, etc. As the State of New York expends through its institutions of the first class between twenty-five and thirty millions of dollars annually, it can be seen how immense the gift of the rich to the poor is in this city. A directory company has a list of six thousand people in New York who are appealed to, and generally with success, by deserving charities. While this number represents but one per cent. of the adult population of Manhattan, it is, in my opinion, large

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for a well-disposed body of known philanthropic persons. We may add to this number of known givers the large list of anonymous givers represented in every church collection. The eight largest Protestant Episcopal churches in New York alone expend annually one million dollars, chiefly in ministration through hundreds of parochial agencies among the poor.

Now the churches—these eight hundred churches in Manhattan have a great deal to show for their expenditure in the direction of moral and social construction. A church has in New York somewhat the effect of sapolio. You can see the dirt and the shadows of vice and crime disappear in its neighborhood. The results in congested and difficult districts of work done by the Pro-Cathedral, Grace Chapel, St. George's, Calvary, St. Bartholomew's, and St. James's (at Holy Trinity in East Eighty-eighth Street), are conspicuous. The same is true in the districts occupied by the Judson Memorial, the Metropolitan Temple, etc. The "Settlements," which are for the most part supported by the church-going classes, add to this mighty cleansing and constructive work. The Young Men's Christian Association and similar societies add their most potent aid. All these agencies are constructive. Education, enlightenment, personal encouragement are principles of this work. Children are taught cooking, sewing, housekeeping, and are provided with games, reading, recreation rooms, gymnasiums, and baths. All kinds of evening classes are held; first those that try to supply immediate and natural needs like dress-making, millinery, embroidery, etc., but all branches of substantial knowledge are taught at convenient times and places, from typewriting and mechanical drawing to arithmetic and spelling, history and rhetoric. Day-nurseries and kindergartens are parts of these establishments. Mothers' meetings and men's clubs offer suggestions and entertainment to parents, while excursions, summer vacations, visits to factories, picture galleries, museums, etc., offer to poor children in these days delightful and enlarging privileges which a generation or so ago the children of the rich themselves did not enjoy. Parish houses, settlements, Christian associations, and summer homes are paid for by a ribbon of respectability which may well enough receive the general designation of Fifth Avenue.

(3) In addition to the philanthropists I have already named, those known because their names are in constant public use, and the unknown who give in every church collection, there are those of another most serviceable class—the five per cent. order. These, too, are constructive: they wish to serve the city by supplying a humanitarian need which shall be endowed by the device of self-support. The Mills Hotels, which are for lodgers who can pay only twenty cents for a bed, are far superior to anything in London which is offered to the same class, and London set the model. The City and Suburban Homes Company have supplied moderate-priced tenements in the city, and represent the best that American financiers, architects, builders, and philanthropic investment can devise.

TENANTS AND THE TENEMENT.

THE philanthropist meets with difficulties in the direction of "housing the poor" which are to some extent insoluble—at least at present.

(1) So far as vice is connected with crowded tenements, there are conditions unfavorable for a radical change, quite outside the province of the rich. As land values increase, which they must do in a growing country, and especially in a metropolis surrounded by water, the rental value of the land must increase. Our system of land-ownership and our growth are responsible for the increase of value; it is not due to the heedlessness or baseness of the rich. As land values enlarge, so must the buildings which cover land. Tenements and homes grow small, and children are crowded into the street. That mediæval death by torture—the room which came together and narrowed itself in every dimension upon its victim—is a reality to-day in New York. The mechanical pressure is rent.

The tenements are largely owned by the rich and could be bettered. But here, too, business considerations prevail. It is claimed the land down town will be needed so soon for commercial purposes, that it would be throwing money away to build, meanwhile, improved tenements. The city grows by such great strides that these forecasts are plausible, though, in my opinion, often mistaken or misapplied. At any rate the reasoning has more justification in New York than anywhere else in the world.

(2) There is another difficulty. Small in-

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vestors as well as large capitalists are greedy of the amount of their plot to be covered by buildings, and the city department is supposed to favor an extension rather than a close definition of the maximum area the law allows. Builders also fight against any restriction as to size and construction that is likely to curtail their sale of material or their profits. Light and air, safety and decency, are sacrificed. This can hardly be charged to the rich alone.

(3) There is still another side of the tenement problem as it is connected with vice—the tenant. I have seen slatternly women and dirty bedding hanging out of windows in brown-stone front tenement houses far from the slums. There are thousands of careless, ignorant poor who would convert a palace into a sty. A philanthropic friend told me that bath-tubs in his model mill-cottages were turned into corn-beef vats and coal receptacles. Christopher Sly was put to bed in a palace, but he did not wake up a prince. Here is seen clearly the side on which religious, social, and moral upbuilding alone can be effective.

The London *Spectator* recently remarked that a millionaire "can by a mere exercise of his will redeem a municipality." No; a millionare cannot redeem a municipality. He can "redeem a slum," convert it into parks, play-grounds, and good homes; but he cannot redeem the inhabitants. The millionaire can assist to provide schools, libraries, gymnasiums; but deeper forces than environment must be invoked to change the denizens of our congested tracts: just as superficial advantages cannot correct the faults of the rich. Empty heads, empty lives, frivolous ambitions, physical ideal of pleasure, drunkenness, immorality, injustice, rowdyism, and greed are not dispelled by any golden wand that can call into being material betterment. The ideals of life are not less sordid on the East Side than on Fifth Avenue. Avenue A would not better the work of Fifth Avenue were these to exchange bank accounts. The poor are not struggling for something better than the rich have—they merely struggle to be rich. But that is enough, you say. How can it be enough if you complain of the rich, of their ideals, expenditures, exhibition of unhappiness? No, New York needs a new and higher spirit, not a local and temporary reform. It needs not so much to banish vice as to banish the "What is there in it for me?" spirit, of which commission-taking, bribe-taking, and blackmail are hardly the most vulgar exhibitions.

NEW YORK IS THE BATTLE-GROUND OF ALL THE SOCIAL PROBLEMS OF THE EARTH.

NOW the surprising thing about New York is, after all, not its vice, but its virtue: the elements of its good government, and not the wide-open evidence of its bad government. New York to-day could not tolerate what is seen in Cairo, Naples, Paris, or London. Although all are under strong centralized governments, there is no comparison between New York and these cities. We need to "move on" and to "step lively" in the way of municipal sweetness, but we have higher ideals and fairer accomplishments than any other great city. The fact is amazing in the light of our population. For it must never be forgotten in considering the municipal problem of New York, that on Manhattan Island are being solved the peculiar problems of every nation under heaven, as well as our own. One of the singular chattels the immigrant brings to our shores, is his especial conception of government and his especial cure. The Russian sells his samovar, but he clings to his conception of the state as an autocratic force and to nihilism or to socialism as the remedy—and so on through the list of race grievances and panaceas. New York is trying to bring all these citizens to a true knowledge of democracy; trying to protect the public schools, trying to give opportunities for wealth, and yet to encourage patriotic citizens who prefer good government to pelf. Its task is herculean. That it is as quiet, as clean, as pure (as it is by comparison) is matter worthy of astonishment. The reason is evident. There is an enormous preponderance of good intention, industry, and kindliness here. A down-town restaurant keeper allows his patrons to help themselves under no surveillance, and to pay quickly as they go out wholly on their own statement. I sent him a message. He replied: "My business is a success because there are more honest than dishonest people in the world." This is optimism of a legitimate origin and order. It is the optimism of a democracy in its greatest city.

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WHAT THE BASKET MEANS TO THE INDIAN.

By Neltje Blanchan.

Illustrated from Photographs.

NOT through a written literature, not through music, architecture, sculpture, or painting, as we understand the fine arts, has the North American Indian yet expressed the intellectual and spiritual aspirations of the race; but chiefly through the artistic handicrafts of the women.

While primitive man, of all races, waged war and hunted, of necessity, primitive woman was ever the constructive element in society, the home-maker, the conserver of industry and thrift, the manufacturer, through simple, homely processes, of the raw products of nature into useful and sometimes beautiful forms, the inventor of many crafts, the mother of the arts, the nurse of religion. To mention only one of her contributions to civilization, there is the textile handicraft, invented by aboriginal women the world around to meet the need for shelter, clothing, hats, cradles, fish- and snaring-nets, mats, and baskets; and so thoroughly did they master the intricacies of weaving, that not a single new stitch has been added to the sum of primitive knowledge by the most skilled modern craftsmen. At the point where primitive women left off, civilized men, at a comparatively recent date, were able to take the work from their hands, apply machinery to it, and convert the manufacture of textiles into one of the great staples of commerce for the world.

Through the same phases of development all races of mankind must pass, ethnology teaches us, and to-day our Indian woman is where Egyptian, Roman, Teuton, Frank, and Briton women once were before their respective races attained civilization and culture. Like the Indian weaver in the West to-day, where civilization has not yet effaced her, these women of the ancient world were once the weavers for their people; references to their spinning, weaving, and basketry abound in early literatures, and examples of their similar work, still extant in museums, testify to the sisterhood of the human race. Into all these primitive home-made articles, beauty slowly found greater and greater expression in form, color, and design; and it was often wrought out through materials so crude and difficult to manipulate as to make one wonder that effort to transform them was even attempted. Civilized man has yet to discover a use for the fretful porcupine, but Indian women have used its quills for centuries to embroider designs on household articles made of skin and bark. The Pimas and Apaches, living in the alkali desert of Arizona, utilize the "cat claws," the hard, stiff, black seed-vessels of one of the few plants that can grow on their arid reservations, to weave the "Greek" key pattern, the mystical Swastika of India, and Egyptian-like geometric, symbolic designs into their wonderful willow baskets.* How much beauty would you and I attempt to put into our cooking utensils and articles of commonest household use with such a pitiful poverty of material?

With a more scientific appreciation of primitive woman's contribution to modern civilization, must come a sympathetic interest in the handicrafts of our Indian woman, whose slow steps in upward progress we may even now behold her taking for her people. We may see the early industrial history of our own race repeating itself in the Western world.

Chief among the Indian's handicrafts is basketry: the most expressive vehicle of the tribe's individuality, the embodiment of its mythology and folk-lore, tradition, history, poetry, art, and spiritual aspiration—in short, it is, to the Indian mind, all the arts in one. Moreover, it is his most use-

*Mrs. Zelia Nuttall has recently enriched the Peabody Museum, Harvard, with the gift of an important volume on the "Fundamental Principles of Old and New World Civilizations," embodying the results of her unique and most laborious research into ancient calendrical, religious, and sociological systems. Among other interesting conclusions which seem to be amply justified by her array of facts is that the Swastika is a symmetrical arrangement of the Great Bear constellation, its seven stars, as seen at midnight during the four seasons in rotation, forming the four branching arms. Only in those parts of the world where the Pole star and the Great Bear are impressively conspicuous did primitive astronomers—the religious teachers of the people—employ the mystical symbol. Mrs. Nuttall traces from the Swastika the evolution of a set of primitive ideas which governed the human race from its infancy—ideas which ultimately developed, in early American civilizations at least, into an ingenious system of government and social organization.

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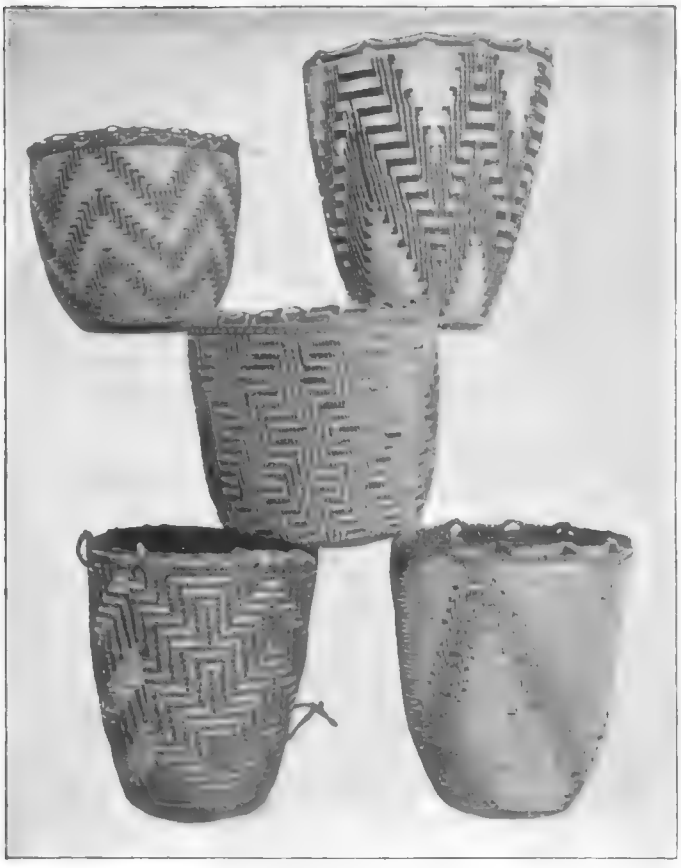

KLIKITAT AND QUINAIELT CARRYING BASKETS. (OREGON AND WASHINGTON.)

Designs represent mountains, streams, rippling waves, and fertile valleys where the plumed quail abounds.

(*Collection of American Museum of Natural History, New York.*)

ful handicraft, serving him from the cradle to the grave.

In a deftly woven bassinet, ornamented with shells, gay feathers, or bits of bright cloth, such as any baby would enjoy, the Indian mother ties her papoose. Hanging the cradle from a sheltering tree while at work about the camp, or suspending it from her strong shoulders when she must wander afield, she allows the precious contents to interrupt her regular labors but little. Here, as in everything she makes, is the simple, perfect adaptation of the article to its uses which gives primitive handiwork everywhere so great an interest. It is only after we attain civilization that the meaningless multiplication of the unnecessaries begins.

When there is not a baby on her back, the squaw has other burdens to carry—wood for the camp-fire, meat from the hunt, fish, grain, nuts, fruit, and water; and again netted twine or woven basket serves every purpose. One of the most beautiful and expressive designs ever made by an untutored hand, was wrought out in a large bag of netted yucca fibre deliberately manufactured as a wood-carrier by a bronze savage girl in one of the out-of-the-way corners of the Southwest.

The shapes of carrying-baskets differ widely. Originally both food and water were doubtless carried in hollow gourds, enclosed in netted twine to give additional strength, while a stick slipped through the meshes made their transportation easy. But in due time the basket evolved from netting, and the cone-shaped carrying-basket made by certain Western tribes to-day is of exceedingly beautiful workmanship. The finely woven decorations represent in symbolic, conventionalized form those familiar natural objects so dear to the Indian heart—mountains, lakes, streams, trees, sea waves, or water fowl, for example—objects with which the particular tribe has closest association. These are the subjects such as ever stir the Indian artist's imagination.

How can water be carried in a basket? one may well ask. Strangely enough, the tribes living in the arid Southwest, where every drop of water is exceedingly precious, are the very ones which chiefly trust to basket water-carriers. No danger of the pitcher breaking at an Indian well. The Paiutes, who make water-jars for their own use, and to barter for blankets with the Navajoes, weave them of willow strippings and coat them with gum from the piñon pine. Many baskets made by various tribes

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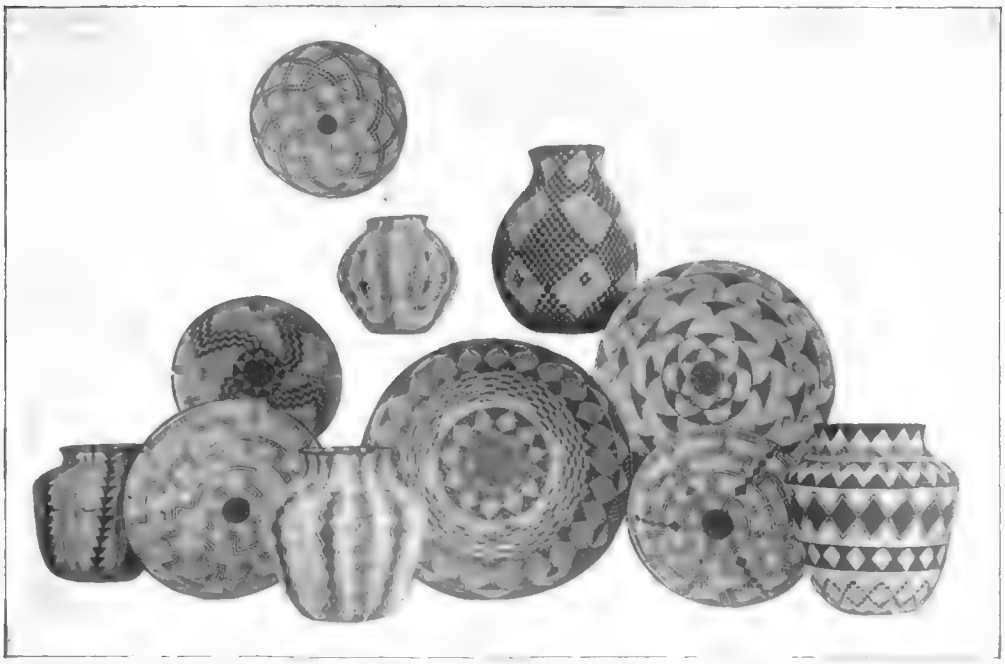
WICKER SCOOP FOR GATHERING ACORNS AND PIÑON NUTS. BASKET-BOWLS IN WHICH ACORNS ARE BOILED BY THE USE OF HOT STONES. A BOTTOMLESS BOWL PLACED OVER A HOLLOW STONE IN WHICH DRIED ACORNS ARE GROUND INTO MEAL. DINNER PLATES. (HOOPA INDIANS, CALIFORNIA.)
(Collection of American Museum of Natural History, New York.)

are tightly enough woven, however, to hold water, even without a gum coat. The bottom of the wicker water-bottle made by the Havasupais in Cataract Cañon, Arizona,



APACHE GRAIN PLAQUES AND JARS (ARIZONA), ALL MADE FROM THE SISAL WILLOW STRIPPINGS AND THE BLACK SEED-VESSELS OF A DESERT PLANT (*Martynia*) POPULARLY KNOWN AS "CAT CLAWS."
(Collection of American Museum of Natural History, New York.)

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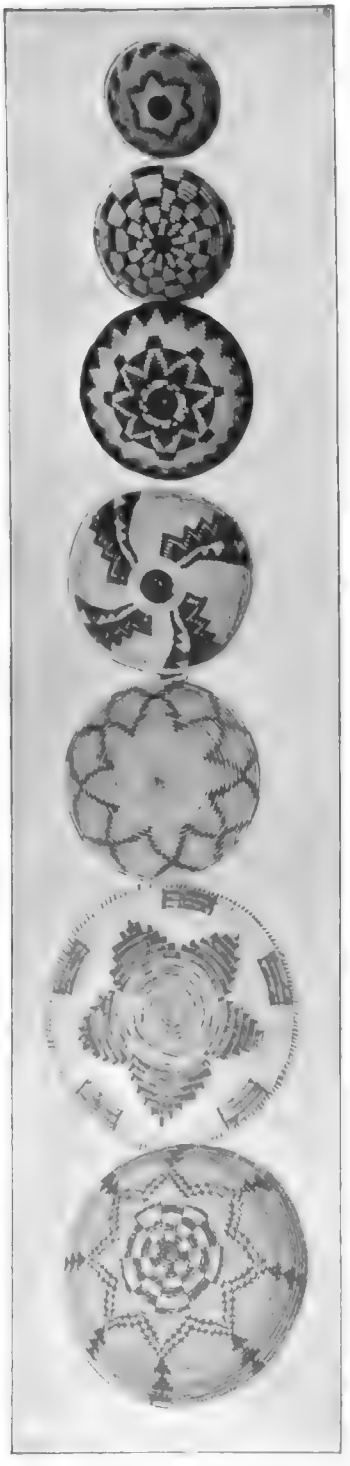
tapers to a point which the Indian sticks into the ground to prevent the bottle from overturning. Handles of braided horsehair, which never break, confine the leather strap by which the squaw suspends the bottle from her head or her pony's saddle. Such bottles may be made to contain a pint or several gallons of water.

In the division of labor among primitive people, at least, women have always taken charge of the family larder. For collecting, preparing, cooking, and serving food, basketry is still most important to the Indian. To gather the nuts under the piñon trees in the Rocky Mountain region, she fashions a spoon-shaped wicker scoop, whose bowl is also a coarse sieve through which the dirt is shaken. Huge storage baskets, representing tens of thousands of stitches, are often as tall as a man, as symmetrical as a Greek vase, and they are laboriously ornamented with symbolic designs which convey whole volumes of meaning to members of the tribe. The White Mountain Apaches, among others, make some wonderful household granaries. Into these great baskets the Indian housekeeper pours the nuts, acorns, fruit, maize, and other grains on her return from nature's market in the woods and fields.

Every Indian woman is her own miller. Going to a favorite rock, hollowed on its upper surface by much grinding, she places upon it a bowl-shaped but bottomless basket to confine the portion of grain being ground, as well as to prevent the wind from blowing away her meal. Through the hole in the bottom of the basket she works her stone pestle diligently until all the grain is ground fine. Even a prosaic basket like this one does not lack its appropriate, poetic symbols. A wicker winnower, to separate the grain from the chaff, is usually shaped like a large scallop shell, suggesting its probable derivation before the Indians were driven backward from the coast into the interior. A basket through which to sift the finer flour is a necessary utensil in every well-regulated Indian household. To-day Chinese merchants still sift tea through basket trays.



MEAL TRAYS WITH SYMBOLIC DECORATIONS, FROM NEW MEXICO AND ARIZONA.

The slightly hollowed basket-plaque, which is one of the commonest and most widely distributed shapes, may be used as a meal tray in the pueblo home, or, heaped with propitiatory gifts to appease the wrath of an angry god, may adorn the village altar; again it is seen in use among the gamblers, who toss their dice upon it. At ceremonial dances of several tribes it is most important; the Navajo wedding feast cannot be eaten from any other dish, and when an Indian dies members of the family reverently place food in basket-plaques on the ground around his grave, that his spirit may refresh itself on its visits to earth. Because of the number of tribes using the plaque, and the great variety of uses to which it is put, no form of Indian basket shows more varied weaves and wider range of decorative design.

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PIMA (ARIZONA) FOOD TRAYS, SHOWING THE SWASTIKA AND SO-CALLED "GREEK" KEY OR FRET PATTERN, WITH INTERESTING VARIATIONS.

(Collection of Mr. Frank M. Covert, New York.)

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PIMA PLAQUE IN THE CENTRE, SHOWING THE SWASTIKA PATTERN. MISCELLANEOUS LOT OF BASKETS.

To interpret Indian symbols without the help of the squaw who worked them out of her own inner consciousness, to get at the thought of the individual weaver, taking into due consideration the mental idiosyncrasies of her tribe, as one must do before the decoration can be rightly understood, is an exceedingly difficult task which the enthusiast with a lively imagination would better leave to the scientific investigator. But no student of races, of the evolution of art, of folk-lore, or of comparative religion can afford to neglect the Indian basket. And the study cannot begin too soon, for basketry has either deteriorated sadly wherever the white people's civilization has penetrated, or it has totally disappeared. In one small collection of meal plaques alone are found three whose decorations tell of the creation of the world according to the legends of as many tribes; another plaque shows four streams flowing in regular, beautiful lines from a lake in the centre to the edge; a Hopi, yucca plaque, with unfinished end, reveals the age of the girl who wove it; a spider-web design wrought into another is a prayer for rain to the spirit which presides over the gossamer clouds that bring it to the suffering people in the desert; a circle set with small stars represents the constellation Corona; a star which radiates toward every point of the compass may be read as a petition for favorable winds while the crops are growing, and yet, to another tribe, the same design may have a totally different significance. But every line on an Indian basket is eloquent with meaning if we could but interpret it—that is what makes the study of basketry so interesting to the collector and so important to the scientist. A pattern which looks like a flash of lightning to desert Indians, whose every thought is directed toward signs of rain, may mean a mountain stream to a tribe living among the Sierras, or, again, it may be intended to represent the incoming tide to Indians with homes near the sea. Still another grain plaque in this small collection has for its border the rattlesnake's markings conventionalized, and it is a prayer, laboriously and fervently expressed, asking for protection of the weaver's loved ones from the deadly rattler. This design, with various modifications which include the St. Andrew's cross, is especially common among the Indians in Northern California and Alaska, whose exquisite basketry, rich in symbolism, is not surpassed by any people in the world.

The acorn is a staple article of food among several tribes, but before it is fit for the human stomach it must first be boiled. How is the Indian, who has no pottery and who never saw an iron kettle, to boil her food? In California there are still to be seen a few squaws cooking in water-tight baskets after the primitive method of their ancestors. Stones heated at a neighboring fire are tossed into the water until it is brought to

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the boiling point, and there it is kept by the addition of more hot stones until the acorns are cooked. Now all the bitterness is gone, and when dry again they are ready to be pounded into meal. The cooking basket of the Hoopa Valley Indians, for example, is a thing of beauty, with mountain peaks and flowing streams on its shapely sides. How repulsively ugly are the civilized cook's machine-made kitchen utensils compared with these hand-wrought vessels in which the Indian woman delights! With genuine artistic feeling she fashions her kettle from shreds of the red-bud mountain grasses, colored with natural dyes, and stems of the maiden-hair fern, the whole often representing weeks of work.

Ages before people had pottery to cook in they had basketry, which is, indeed, the oldest and the most universally practised handicraft known. Perhaps a hunter returned home hungry one day in the far-away past, and his wife, anxious to hasten dinner for her impatient lord, coated her cooking-basket with clay that she might set it directly over the fire without danger of burning. Imagine the woman's surprise and joy to find on removing it from the embers after dinner that she had a basket plus an earthenware pot! Thus directly from basketry was pottery evolved. One finds the same shaped vessels of clay as of wicker-work among the Zuñi and other potters, and the same decorations in many instances on both. Moreover, the Havasupais still use clay-lined basket-plaques to hold glowing wood embers and kernels of corn, which are kept dancing together by the dexterous cook until the corn is parched: meanwhile the clay hardens. Numbers of good cooking utensils are thus produced.

POMA CARRYING BASKET AND GRAIN RECEPTACLE, SHOWING FAVORITE MOUNTAIN RANGE, LAKE, STREAM, CLOUD, AND RATTLESNAKE DESIGNS; FEATHER AND WAMPUM DECORATIONS.

(Collection of American Museum of Natural History, New York.)

MONO (CAL.) FOOD BASKET, WITH BANDS OF THE DIAMOND-BACKED RATTLESNAKE DESIGN (A PRAYER FOR PROTECTION), WITH MEDICINE MEN ON THE SIDES.

(Collection of Mr. John Wanamaker, New York.)

Far to the North, where the cedar tree furnishes the wretched natives with practically every comfort they have, wooden cooking-boxes, fashioned from its trunk, hold the water into which hot stones are tossed when fish or blubber is to be boiled. Clothing is woven from shredded cedar bark, and mats for the weaver to sit upon. But even in this desolate, poor land, an earnest striving after some expression of beauty is seen. In the most remote islands in the Aleutian chain, the Indian woman, unrewarded by applause or hope of gain, weaves exquisitely fine, dainty treasure-baskets, being impelled by impulses as natural as those of a bird whose weaving is scarcely less amazing. The longest, hardest journey is not too wearisome to deter a squaw from going to collect rare roots and grasses or dyeing material; a lifetime is not too long

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CHOCTAW AND CHEROKEE CANE-WORK (LOUISIANA).

Gift baskets in the shape of the heart, which, these Indians say, should always accompany an offering. The covered basket, a double weave, one basket woven within another, represents a practically lost art, only one old woman in the world now practising it.

to perfect herself in the handicraft bequeathed to her as a tribal trust from former generations. When vegetable fibres seem inadequate for all the beauty she fain would express, the Poma weaver, in California, adds rare feathers, wampum, ala-

ALASKAN WALLETS, CARRYING BASKETS, TREASURE BASKETS WITH RATTLES IN THE COVERS, AND PLATES. ALEUTIAN EMBROIDERED WALLET.

(Collection of the American Museum of Natural History, New York.)

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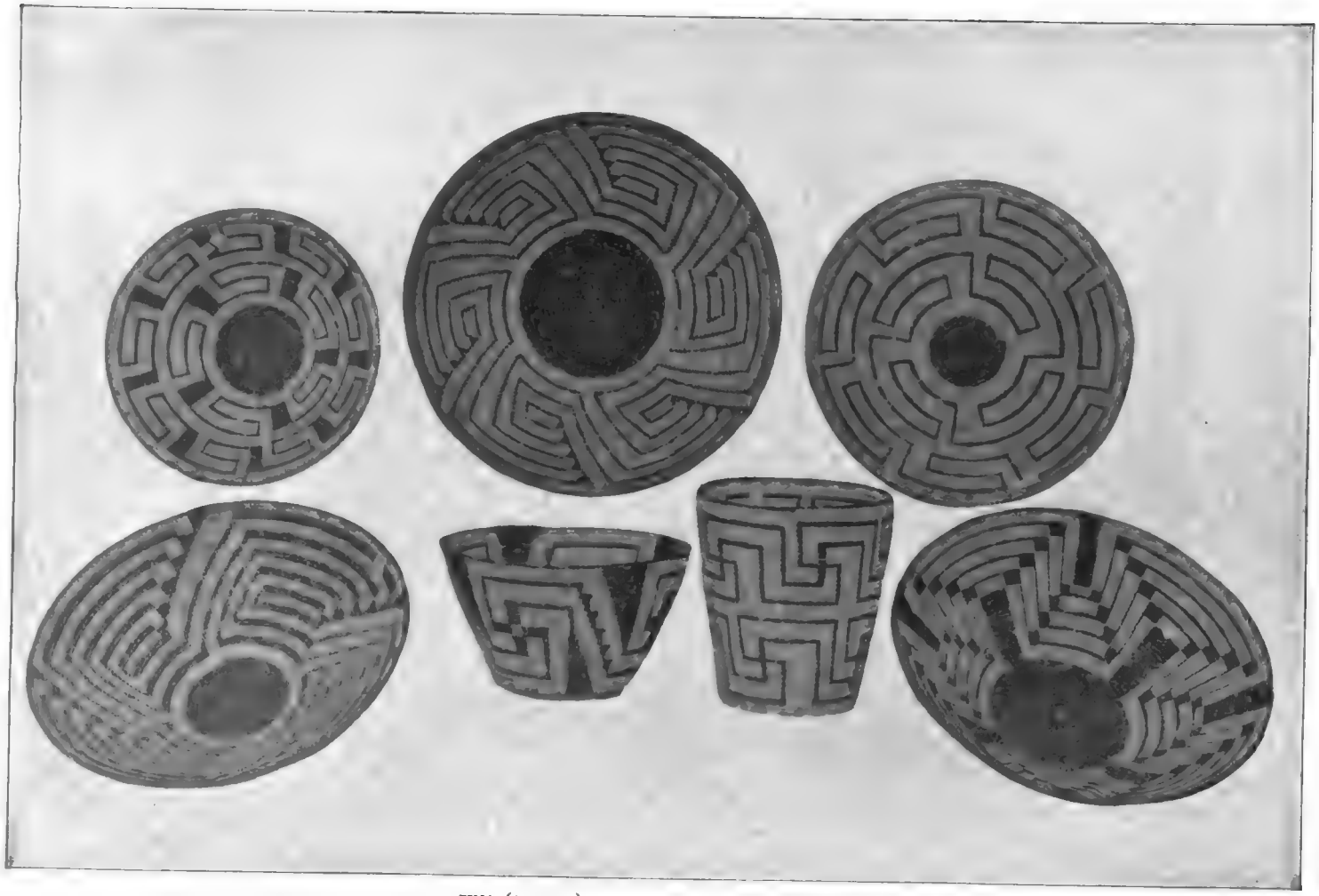

PIMA (ARIZONA) FOOD TRAYS AND RECEPTACLES.

Another part of the collection shown on page 565.

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bone, and sometimes bits of silver, although the finished marvel is destined for the bonfire in the death-dance ceremonial. One of these exceedingly fine Poma feather baskets, which is always as valuable as a pony, was recently sold to a museum for eight hundred dollars. "Dat-so-la-lee," a Washoe weaver whose skill is probably unrivalled in any land, has recently made an intricate basket that was sold for eighteen hundred dollars to a private collector, and he possesses a masterpiece of art as truly as the connoisseur who invests thrice that sum in a piece of bronze or a painting. If the Indian woman reaped the profit of her toil, and not the frontier trader (who is a shark in far too many instances), there might be greater hope of preserving the native industries. As it is, they are perilously near becoming among the lost arts.

POMA DEATH CEREMONIAL AND HOUSEHOLD BASKETS, DECORATED WITH WAMPUM, THE PLUMES OF THE VALLEY QUAIL, AND THE RED CREST FEATHERS OF THE WOODPECKER.

The Pomas of California are the most remarkable basket makers in the world.

(Collection of American Museum of Natural History, New York.)

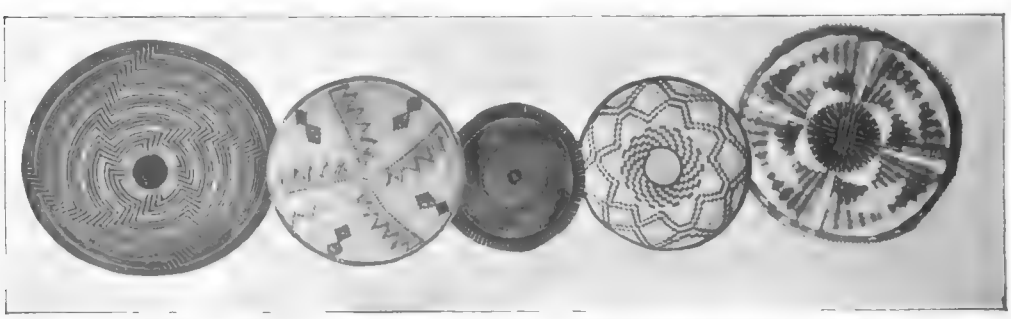
The Indian imitates what she sees about her; she is a silent, profound student of nature, which she strives to copy; but in order that natural objects may come within the limitations of basketry—the principal medium of expression—every object has to be conventionalized, its form modified.

The Indian is essentially artistic, not musical, like the African negro, and not literary, however masterful in the use of words in oratory. There is every reason to believe that our national art will receive new direction, a fresh impulse, from educated Indian Americans.

The poor Indian,

> "whose untutored mind
> Sees God in clouds and hears Him in the wind,"

has recorded a wealth of such spiritual visions in her baskets alone: scarcely one of them that does not contain a prayer. To how much of the handiwork of modern civilized women, tutored or untutored, could equal praise be given?



APACHE, HARASUPAI, HOOPA, HAVASUPAI, AND HOPI (ORAIBI) MEAL OR BREAD PLAQUES.

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"DOGS OF THE COLLIE TYPE PREDOMINATE, AS THEIR INHERENT INTELLIGENCE, DUE TO LONG GENERATIONS OF SHEEP-HERDING, PRECISELY ADVANCE THE QUALITIES MOST NECESSARY FOR THIS NEW WORK."

DOGS OF WAR.

How Dogs are used in the German Army for Messenger Service, Ammunition Carrying, in Red Cross Work, and so on. The Remarkable Development of this Idea on the Continent.

By Maximilian Foster.

Illustrated from Photographs.

A GERMAN "YAGER" WITH HIS DOG OF WAR.

At all recent field manœuvres of the German army a number of practical experiments have demonstrated new uses to which dogs of trained intelligence may be put to assist the purposes of man. These trials, although still in the preliminary stage of development, have assumed an extraordinary success, and, as a result, the system has been permanently attached to the entire corps. It is not here alone, however, that the superior qualities of the animal have been displayed of late; for in several other fields various European governments are now developing canine instinct in really remarkable ways.

Heretofore the use of dogs by any government has been of a rather haphazard nature. Among the ancients—notably the Romans—animals of instinctive ferocity were utilized for the several purposes of foray, attack, and the

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guarding of camps. The training, however, seems to have been inadequate; and in the heat of battle the four-footed militants were quite as likely to seize upon a friend as they were to lie foul of the foe. Usually it was the bloodhound that was put forward among the fighting forces; and in the classics there are frequent references to hounds of this breed imported from the British Isles and trained to go against the barbarian. But with the development of the arts of war, dogs eventually went the way of the two-handed sword, the jousting spear, armor, and the bow. After the introduction of gunpowder they disappeared entirely from the field of battle, until at length the Czar found it expedient to introduce them in the Turko-Russian affair.

Under the Russians—the first appearance of dogs in modern war—their use was vague and without a really definite purpose; and for this reason, no doubt, the effort was discouraged by the Muscovites. Later the French tried their hands at training a species of heavy hound for this purpose, and in the small wars against Tunis and Algiers they were utilized with some success. But, as with the Russians, the French failed to direct intelligently the training of their dumb allies, and their subsequent military career for a long period was confined to tracking and detecting offenders against the customs laws. In Italy and Austria, also, there were efforts to develop dogs for the purposes of war; but here, too, they failed, for the precise reason that made their use inexpedient in the French and Russian manœuvres. Germany, however, when others had tried and failed, essayed the system in its most practical field, and, with painstaking effort in place of superficial trial, readily accomplished success.

Now aside from this purely military detail, dogs of a variety of types have a place in European economy utterly unknown to America. In this country, with the bare exceptions, perhaps, of the police use of sleuth hounds and the employment of huskies in the snow-lands of the north, a dog's only service to his master is companionship or sport. In Alaska and the Canadian wilderness, where they are winter beasts of burden, thousands of miles of wilderness would be impassable save for their employment. But aside from this, they have no place in the labor of the country. In Europe, however, exigency has pushed them into a place as important as that of the horse and draught-ox of our American farming communities, and this is particularly true of Belgium and certain parts of Holland, Germany, and France. There they are trained to draw the cart of the petty dealer, to turn the churn-mill, and to perform other offices unknown to canine America. And, unlike the horse or other draught-animal, they require no special fodder, but thrive on the scraps discarded by their masters.

The European development of the dog has, in its many generations of training, provided an animal singularly suited for the use to which he is now put by the German soldier. He is docile as a rule, hardy and intelligent, and thoroughly capable of instruction. Furthermore, the animal's ignorance of peril upon the field of war suits him for work that none but men of extreme courage otherwise could perform. Nor can even the most imminent peril baffle his intelligence, a thing that too frequently occurs when extreme danger confronts the most heroic human mind. This much is taken for granted; furthermore the dog's superior sense of smell is a still greater advantage.

In the present experiments the German army-dogs have been trained either for hospital work or for the carrying of ammunition to the front and for the transmission of despatches. In both branches their extreme intelligence has been extraordinary, and thoroughly satisfied by this, the authorities have resolved to extend their usefulness in other directions.

The manifold advantages of the system are apparent. As an instance, for purposes of protection alone, the dog's superiority in some ways over man is marked. History gives frequent account of the detection of night attacks and ambush by four-footed camp-followers, and when it is remembered that these warnings were purely involuntary and not the result of training, it may be understood at once what the development of this instinct should mean. Scent tells oftentimes quicker than the sight, and a dog may often smell a foe long before he is within view. As a companion in isolated outposts, to pickets and the solitary sentry, a dog's company has in more instances than one been invaluable, and the Germans, in their experiments, have proved this to a marvellous degree. As a carrier of ammu-

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YAGERS AND THEIR DOGS WAITING FOR ORDERS.

"The dog, in itself, is a speedy messenger, undeterred by terror."

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DOGS OF THE YAGER CORPS.

"On the march it is absolutely necessary to hold them in leash."

nition and a bearer of despatches, his aid is unique and vastly superior. During battle, the soldier bearing despatches must either expose himself on horseback or reduce speed to a minimum by travelling afoot. Moreover, his nerve may fail at a critical moment, and thus destroy his usefulness. But the dog, in itself, is a speedy messenger, undeterred by terror, since the fear of war's horrid death is something of which he can possibly have no conception. This unwitting bravery, however, might militate against him were it not for the fact that he is capable of a training that teaches him to seek cover, to skulk and sneak upon his way when imperilled by the bullets of the enemy. Still again, a sufficiently trained dog may easily pass with despatches through an enemy's lines, where a soldier mounted or afoot would be shot or captured at the first attempt.

All this has been proved by the German trials.

In training the canine carriers to take ammunition to the firing-line, the system is not unlike that employed here in teaching the conventional sporting dog to range after game. The direction is given and the dog "hied-on" by voice and gesture. Once started on the line, he is taught to keep it, and when in view of the advance, he is readily called in by any soldier that sees him. A part of his training, moreover, teaches him to respond only to a uniform that he knows, and here his singular instincts are most aptly displayed.

At an early age—usually before the end of its first year of life—the subject is taken in hand. The instructor begins by familiarizing the animal with its surroundings, attendants, and friends. A few weeks of this teaches it to love and respect men in the uniform of the German army, for it is the inviolable rule that no person in that uniform shall in any way disturb or annoy any dog attached to the corps. Thus the instinct of affection is instilled, and this accomplished, the dog discovers the contrast. Men in the uniform of foreign forces—usually the French or Russian costume—tease and torment the animals until they are beside themselves with rage and ferocity. Chained to a kennel post, they are unable to get at the tormentor, and day after day they are subjected to this treatment until fairly on the way to rabies. But

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between times, soldiers in the familiar uniform of the Germans drive off the offenders, and grant to the tortured beasts a respite of attention and kindness. In this way the animals are taught to differentiate between friend and foe, and as a result they will sport and hobnob with any soldier of their own forces, but fall into a mad ferocity at the sight of any unknown uniform. In fact, it has been found impossible after short training to allow them at large, for in numerous instances they have attacked postmen, railroad guards, and others attired in garb other than the army dress, and so on the march it is absolutely necessary to hold them in leash.

Once the dogs have learned this lesson from friend and foe the training is broadened. Riders, either on horse or awheel, are sent along a course dressed in some obnoxious livery, and the dogs are slipped at sight. It is hardly necessary to add that few riders, however bold, can stand against them. Some of the animals have been known to launch themselves at a rider's throat even when he was on horseback, and with the mere force of the blow knock him from his seat. With a wheelman, it is, of course, much simpler. The riders employed in this training wear an under suit of stout leather padding, and once the dog lays hold it never lets go until the trainer gives the word.

If trained for outpost duty, the dog is taught merely to give warning of whoever approaches the sentry. Then he is either called to heel, if a friend approaches; or, if the case demands, he is sent forth to investigate. If it is a foe who draws near, it is safe to say that the chance of a surprise is remote indeed.

It is in the hospital work, however, that the greatest sagacity of the German army-dog is displayed; a welcome fact, after all, when one considers that the dog stands as man's best friend rather than his foe. Its development here has been extraordinary, and to-day the entire German army is rapidly supplying itself with a Red Cross corps of dumb attendants.

This branch of the dog service was inaugurated by the German Society for Ambulance Dogs, an institution that was established in 1893, and now boasts a thousand members. Its moving spirits include many of the high princes and nearly all the leading generals of the army, and its work is a philanthropy pure and simple. All of its dogs are bred and trained free for the army; its kennels and training force are

"TO SUCCOR THE WOUNDED AND TO DISCOVER THE DEAD."

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A NIGHT GUARD WITH A STIFF-HAIRED BELGIAN SHEPHERD DOG WEARING ITS ENTIRE OUTFIT.

From a photograph taken especially for EVERYBODY'S MAGAZINE *through the courtesy of M. de Wesermaël, Chief Commissioner of Police of Ghent, Belgium.*

supported by voluntary subscription, and it constantly maintains about fifty dogs in training.

In breaking the young dogs to their work, extreme care is taken to avoid any semblance of compulsion, and it is in this that the directors of the enterprise believe they acquire their real success. But at all events, whatever the reason, the results have been of the most astonishing nature.

At dawn, the dogs under training are turned into the fields, and after a few hours' coursing are thoroughly groomed and rested. At noon, they get the only meal of the day, which consists invariably of dog-cake, broth, and vegetables. In America this perhaps might be considered inadequate, but the fact is that the Germans make a point of saying that more good dogs are ruined by meat and over-feeding than from any other known causes, an intimation that may be of some purpose to many of our own breeders.

Day by day this order of training is systematically broadened; the dogs are slipped in cover and taught to explore heavy woodland and dense undergrowth. Every effort is made to interest them, and although the work may appear laborious, it is, on the other hand, of a character calculated fitly to obviate the least monotony. The rule is work and plenty of it, but of a nature that does not sodden the animal with fatigue, or overmatch its talents.

In this dense cover, the animal under training is taught to seek out hidden men and to give note of their discovery. Simply speaking, it is retrieving of a higher kind, and the precise intention is to succor the wounded and to discover the dead that otherwise might be overlooked. In actual work the dog bears a Red Cross kit containing stimulant and simple bandages. He ranges these thickets or courses the open, and wherever there is a fallen man he goes to him without beck or call. If the man be dead or unconscious—and all this is simulated in the training—the intelligent creature is taught to give voice. Or if the sol-

A NIGHT GUARD WITH A FRENCH SHEPHERD "PICARD" DOG.

From a photograph taken especially for EVERYBODY'S MAGAZINE *through the courtesy of M. de Wesermaël, Chief Commissioner of Police of Ghent, Belgium.*

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"IN THIS DENSE COVER, THE ANIMAL UNDER TRAINING IS TAUGHT TO SEEK OUT HIDDEN MEN AND TO GIVE NOTE OF THEIR DISCOVERY."

dier be lying in some remote thicket, hidden from ordinary observation and unable to cry for aid, the dog seizes the sufferer's cap or some other accoutrement, and races back to the nearest ambulance.

Following this system, every soldier in the German corps is taught to-day just what to do when approached by a hospital dog. If able to use his hands, the wounded man may succor himself from the dog's shoulder-bags and from the flasks borne about the animal's neck. Then he is directed to give to the dog either his cap, his handkerchief, or even a belt. Once this is placed in the dog's mouth, it is trained to race away to the nearest point of relief and to return, leading the relief to the disabled man.

A trial of the dogs at recent manœuvres near Coblentz aptly demonstrated an assertion of Herr Bungartz, the official head of the Society. During the withdrawal of the forces, about two hundred men were directed to comport themselves as if wounded or dead. Now, it is a psychological fact that a wounded man bears some of the attributes of an animal in this plight. With certain wounds he is almost certain to crawl into the densest covert practicable, and there lie until overtaken by death. A shooter of big game will understand how this instinct works among all animals, and man is sometimes even more painstaking during his last mortal moments in seeking the deepest seclusion. So in the Coblentz experiment, the two hundred recruits were laid about precisely as if they had fallen in battle. Following this preliminary, the usual ambulance corps was directed to bring in the dead and wounded. The corps scattered broadcast, yet with every advantage of understanding the circumstance, eighteen men were overlooked. When this was demonstrated, the dogs were brought into the field, and in twenty minutes—an incredibly limited time—found out and, by their actions, plainly denoted the whereabouts of the lurking eighteen. In time of war, without the aid of this band of intelligent, sagacious searchers, these men inevitably would have been lost. Still further practical experiments have shown that night or any darkness has little effect in curtailing the

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aptitude of the animals. After sundown—the time when war halts, since men cannot see to kill—then is the period when the surgeon, the ambulance corps, and the seeker of the dead have their greatest work, and here the dog's aid is invaluable. He goes forth nosing his way along, and with a bell upon his collar bears tidings of the glad relief. An ambulance follows, its attendants provided with acetylene lamps, and these

collie with types like the Great Dane and St. Bernard—favorable results have been obtained, although the slowness of the great dogs and their limited power of scent make that particular kind unavailable. The English, who are now experimenting, have tried the Irish wolf-hound with the collie, and apparently have found a collie strain the most expedient. In Germany, Great Danes are largely used for ammunition-despatch,

AFTER THE MORNING'S WORK.

"The dogs under training are turned into the fields, and after a few hours' coursing are thoroughly groomed and rested."

trials have demonstrated that few of the wounded will escape the dog's intelligence, however great the darkness.

In these experiments the Germans have not confined themselves to the use of one particular type of dog, but have striven to detect the best qualities in all kinds whose characters suit them for the work. Dogs of the collie type, however, predominate, as their inherent intelligence, due to long generations of sheep-herding, precisely advance the qualities most necessary for this new work. By off-breeding—crossing the

and a sort of wire-haired sheep-dog has also been tried with some success.

Another canine employment newly in vogue is the training of highly intelligent dogs for police service. This has been brought to its highest development in Ghent of Belgium. M. de Wesermaël, the Chief of Police, was led to adopt the system through numerous depredations in the detached purlieus of the city. He found that no watchfulness or care among his men could cope with the craft of a large body of malefactors who confined their attention to isolated

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farms and villas. Discovering the use to which dogs were then being put in European armies, he conceived the brilliant idea of training them to his own need, and an experimental station was established. Belgian sheep-dogs of the long-haired "Picard" variety, and the more common short and wire-haired animals, were drafted from the neighboring country, and put through a systematic training. Kindness was the essential rule, and by means of dummy figures the dogs were encouraged to seize any man that might resemble in manner and dress an escaping thief. Great patience was exerted, for a cardinal principle involved was that the dogs must seize and hold their quarry without materially hurting it.

The first step was to hunt a hiding man, a trait that the dogs rapidly acquired, and following this the pupils learned to swim, to seize quarry in the water, to save life from drowning, and to overcome every possible obstacle. During the day the animals are permitted to rest, and at 10 P.M. their night tour begins. Each is equipped with a steel collar armed with sharp spikes, and frequent experience has shown that no man, however powerful, can handle one of them bare-handed.

The process of training and feeding the police animals differs somewhat from the army practice, although its basic principle is the same. The animals are fed twice a day—once at 6.30 A.M. and again at 7.30 P.M. At midnight they get a dog-biscuit or a slice of bread, a regimen that never varies. After a fortnight they are taken every evening to the evening muster of the patrol, where the officers feed them a small piece of meat, and pet them sufficiently to make it understood that they are friends. On the homeward way they are taught the ground between their district station and police headquarters. During the following three weeks the dogs are sent nightly over a specified beat, and after three months of this training they are ready for service. During this interval they are never permitted outside during daylight, and as a result they become familiar with the police uniform only and learn to hate every other costume. But while this distrust is taught, they are at the same time restrained from attacking any one until laid-on by their master.

In a report bearing upon the dog service, the chief of police advances the advantages he has obtained from their use. "I find that they are cheaper; men get tired, and, the uniform hindering, they cannot always follow an escaping thief as fast as they ought to. Thieves are fresher and generally superior in number to the police, who without the dogs would be entirely unprotected. The dogs possess a fine sense of smell and hearing, and can crawl into places noiselessly, which a man cannot do. Furthermore they inspire an unaccountable terror in the heart of the evil-doer, and greatly sustain the courage of the policemen. Theft has decreased sixty per cent. since the dog service became properly organized."

In the United States there have been individual instances of dogs attached to the service of the police, and a few years ago an undersized nondescript was attached to the Tenderloin Station in New York City. On a variety of occasions he won renown for himself and the police he attended by overhauling escaping miscreants, and among the malefactors of that notorious section he was held in the most wholesome respect. But after the death of this animal there was no effort to replace it, nor did the Department ever take cognizance of its rather remarkable ability.

There are really very few bloodhounds in this country, for the reason that the strain is virtually indigenous to England and is difficult to obtain. Our nearest type to the breed is the simon-pure fox-hound, which, by selection and breeding, has been qualified for the work done by the English animal. None of our hounds are qualified for registry as bloodhounds, and the majority are quite worthless for tracking man. The so-called Siberian, Russian, and Cuban bloodhounds are in the same category.

At Shellman, Georgia, the Gwin bloodhounds are among the few specimens of the type this side of the Atlantic, and the pair, Tarbuck and June V, readily show the inferiority of the American breed. One instance of their work was a short time ago on a trail sixteen hours old. Thirty minutes before the hounds were laid-on a light rain fell, but despite this the pair worked out the tangle, and after a five-mile run treed their man in fifty-two minutes.

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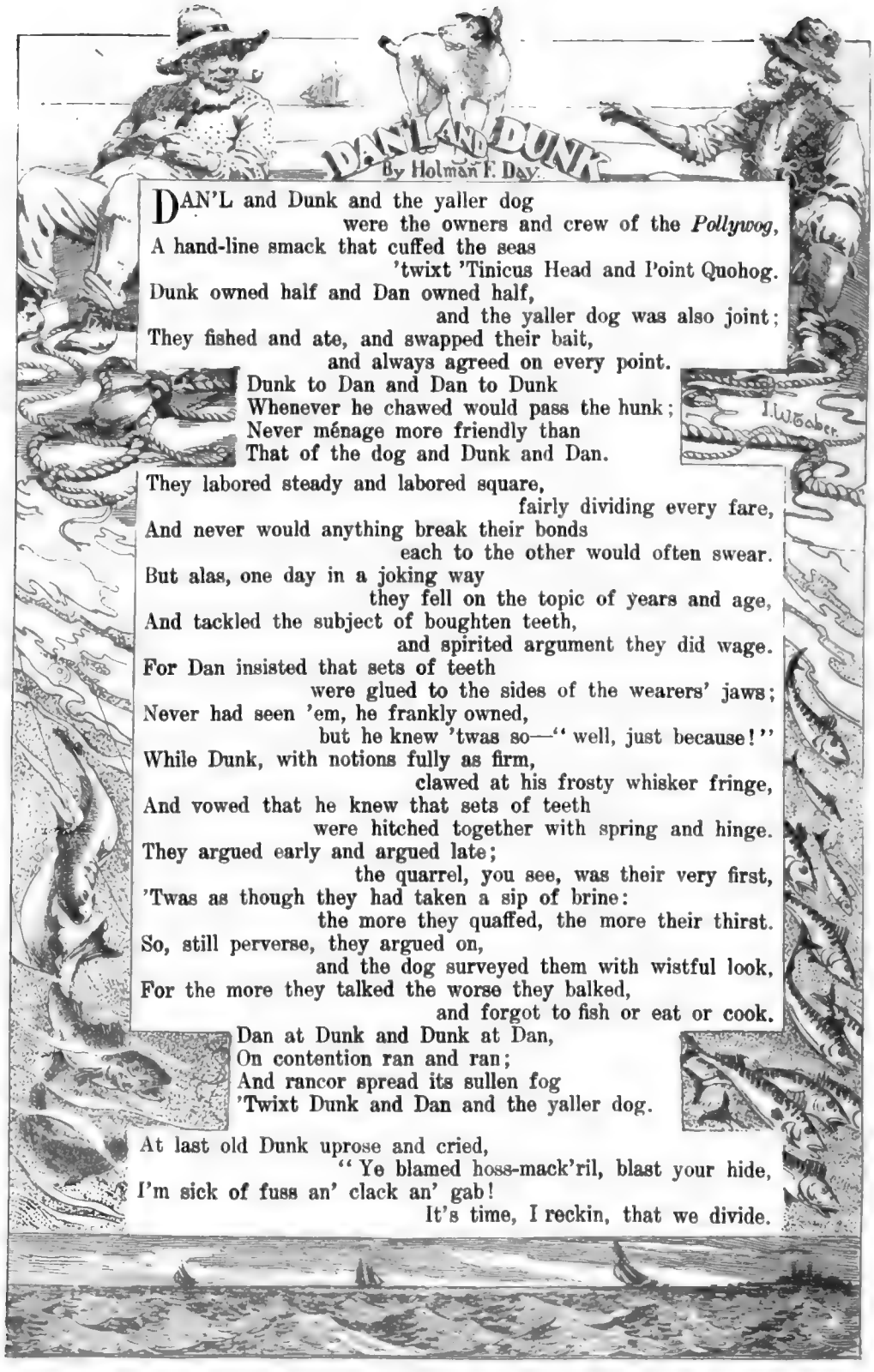
DAN'L AND DUNK
By Holman F. Day.
DAN'L and Dunk and the yaller dog
were the owners and crew of the *Pollywog*,
A hand-line smack that cuffed the seas
'twixt 'Tinicus Head and Point Quohog.
Dunk owned half and Dan owned half,
and the yaller dog was also joint;
They fished and ate, and swapped their bait,
and always agreed on every point.
Dunk to Dan and Dan to Dunk
Whenever he chawed would pass the hunk;
Never ménage more friendly than
That of the dog and Dunk and Dan.
They labored steady and labored square,
fairly dividing every fare,
And never would anything break their bonds
each to the other would often swear.
But alas, one day in a joking way
they fell on the topic of years and age,
And tackled the subject of boughten teeth,
and spirited argument they did wage.
For Dan insisted that sets of teeth
were glued to the sides of the wearers' jaws;
Never had seen 'em, he frankly owned,
but he knew 'twas so—"well, just because!"
While Dunk, with notions fully as firm,
clawed at his frosty whisker fringe,
And vowed that he knew that sets of teeth
were hitched together with spring and hinge.
They argued early and argued late;
the quarrel, you see, was their very first,
'Twas as though they had taken a sip of brine:
the more they quaffed, the more their thirst.
So, still perverse, they argued on,
and the dog surveyed them with wistful look,
For the more they talked the worse they balked,
and forgot to fish or eat or cook.
Dan at Dunk and Dunk at Dan,
On contention ran and ran;
And rancor spread its sullen fog
'Twixt Dunk and Dan and the yaller dog.
At last old Dunk uprose and cried,
"Ye blamed hoss-mack'ril, blast your hide,
I'm sick of fuss an' clack an' gab!
It's time, I reckin, that we divide.
I. W. Taber.

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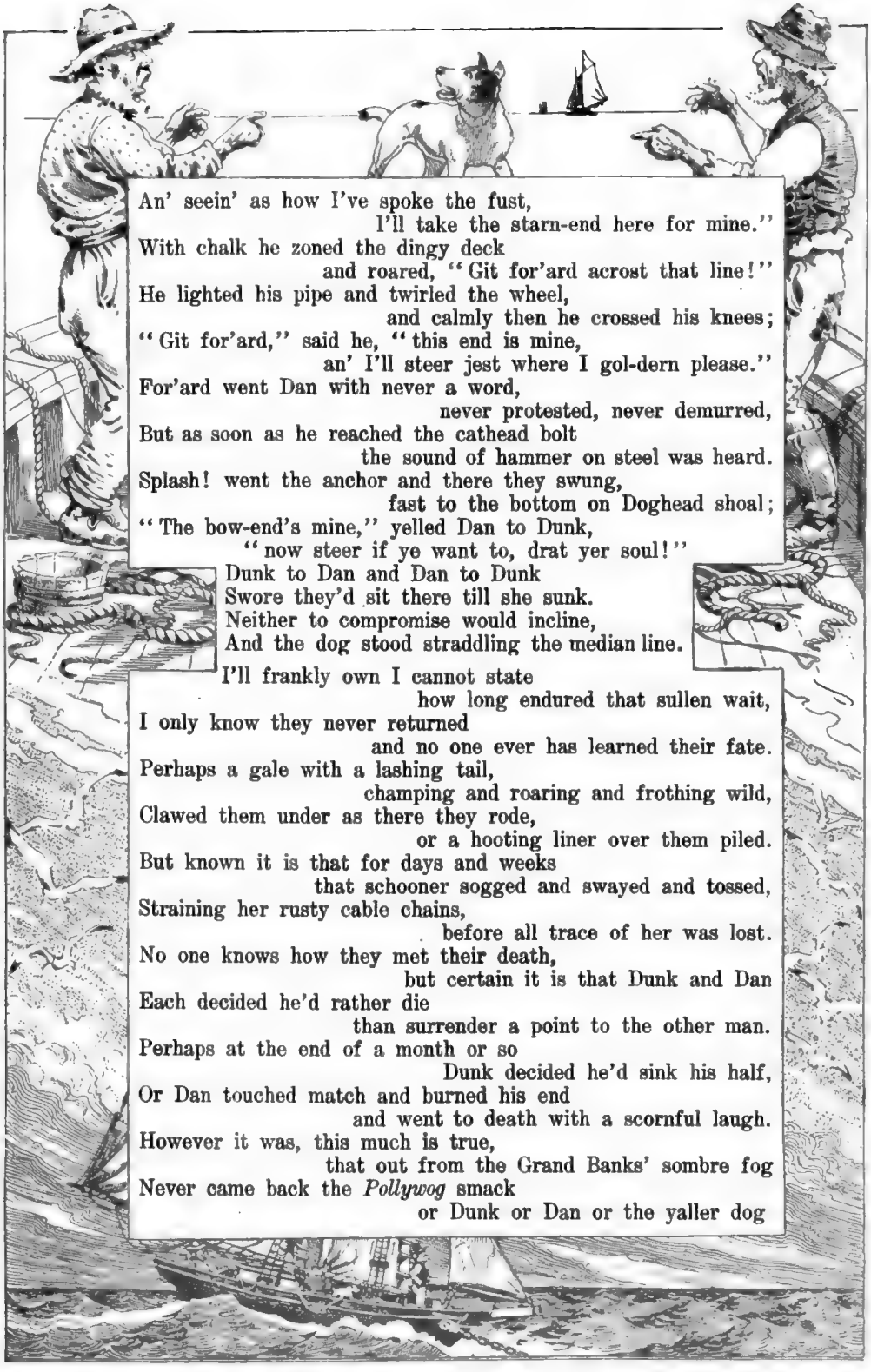

An' seein' as how I've spoke the fust,
I'll take the starn-end here for mine."
With chalk he zoned the dingy deck
and roared, "Git for'ard acrost that line!"
He lighted his pipe and twirled the wheel,
and calmly then he crossed his knees;
"Git for'ard," said he, "this end is mine,
an' I'll steer jest where I gol-dern please."
For'ard went Dan with never a word,
never protested, never demurred,
But as soon as he reached the cathead bolt
the sound of hammer on steel was heard.
Splash! went the anchor and there they swung,
fast to the bottom on Doghead shoal;
"The bow-end's mine," yelled Dan to Dunk,
"now steer if ye want to, drat yer soul!"
Dunk to Dan and Dan to Dunk
Swore they'd sit there till she sunk.
Neither to compromise would incline,
And the dog stood straddling the median line.

I'll frankly own I cannot state
how long endured that sullen wait,
I only know they never returned
and no one ever has learned their fate.
Perhaps a gale with a lashing tail,
champing and roaring and frothing wild,
Clawed them under as there they rode,
or a hooting liner over them piled.
But known it is that for days and weeks
that schooner sogged and swayed and tossed,
Straining her rusty cable chains,
before all trace of her was lost.
No one knows how they met their death,
but certain it is that Dunk and Dan
Each decided he'd rather die
than surrender a point to the other man.
Perhaps at the end of a month or so
Dunk decided he'd sink his half,
Or Dan touched match and burned his end
and went to death with a scornful laugh.
However it was, this much is true,
that out from the Grand Banks' sombre fog
Never came back the *Pollywog* smack
or Dunk or Dan or the yaller dog

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A MATTER OF BUSINESS.

By C. Bryson Taylor.

Illustrated by Rudow Rummler.

CARTOUCHE pressed his nose against the stout iron bars of his cage and snarled, and Reddy, under-keeper and general factotum of the show, bestowed an insulting slap upon it; so that Cartouche snapped savagely and retreated to the farthest corner, the short yellow hair along his spine bristling like an angry dog's, and his eyes glowing redly. He was a magnificent young brute, not yet two years old, sullen and treacherous and cunning, after the manner of his kind, with the softest coat and the sleekest sides and the worst temper of all the leopards in the Zoo.

"You see him now!" quoth Reddy, eying him with professional admiration. "Such a head, und der way he holds it, like a king. Look at der chest of him, und der muscles rippling when he moves. Und his claws! Mein Gott! He could tear a man in pieces, und for him it would be play. He haf der devil soul, dot beast! See der eyes of him, mister. He knows what I say so well as you do. He is der youngest, und my wife says he is der hardest to teach."

"Your wife?" I said. "Is Mam'selle Gabrielle your wife?"

"Yes, mister. Is she nod beaudiful, and does she nod them handle well? We have been married two years."

Reddy was an honest, whole-souled German, unable to see a yard ahead of his own nose, and his story was not hard to read—especially when one had seen Mam'selle Gabrielle. He was short and squat and of a general ruddy tinge as to countenance and hair, with artless blue eyes and an engaging smile. She was tall and svelt and queenly, a Frenchwoman to her agile finger tips, bearing herself superbly, with a carriage that an empress might have envied. Reddy adored her, humbly and from afar, and she tyrannized over him with a careless contempt that he never dreamed of resenting. She was a trainer, earning good pay in the work she loved. He had been a trainer once, but a playful tap from the paw of a favorite lion had forever put him out of business.

"You've never seen Gabrielle mit her leopards, mister?" he said, interrogatively. "She has four—Cartouche, Pierre, Plon-Plon, und Cleopâtre, und Cartouche she loves der best. Und it is not all foolishness, as some peoples say. There is much in it that one may nod understand who does nod know. She is teaching Cartouche a new trick, und it is great!"

His blue eyes saddened a little.

"I, too, could do it once, mister," he said, proudly. "It was nod der beast's fault. No—it was a chance, und I am nod blaming him."

"Are you not afraid for your wife when she is in the cage with those brutes?" I questioned, curiously.

He drew himself up.

"No, mister. She can take care of herself—my wife. Und she handles them as no one else can. Will you nod come und see her to-nide? It would please her—und me."

Cartouche raised his head suddenly, staring behind us, and Reddy turned.

"It is she," he said, eagerly. Mam'selle Gabrielle came towards us with something of the lithe, free grace of her animals in her gait. Properly dressed, she would have been a beauty. She eyed us curiously.

"Monsieur Holt wishes to see you," she said to Reddy.

"Yes—yes," said Reddy, quickly. "Aboud dose liddle lion cubs. I have asked der shentleman to see der show to-nide, not?"

Mam'selle Gabrielle bowed gravely to me.

"We shall be glad to see m'sieur," she said, courteously. Reddy hurried away, and Mam'selle Gabrielle approached the cage and spoke to her pet in French, low and caressingly. Cartouche gazed at her with sleepy yellow eyes, blinking lazily like a great pampered cat.

"He evidently knows you," I remarked, for want of something better to say. She looked at me in amused tolerance of my ignorance.

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"But, yes, he knows me," she said, indulgently. "They all do; it is natural."

"Have they never harmed you?" I asked, with growing interest.

"I have many scratches," she said, simply, "but nothing to lay me up more than a few weeks. But—*ma foi!*—what would you? In the end they will kill me, I suppose."

The matter-of-factness of her tone was startling.

"Then why go on with it?" I asked.

She interrupted quietly.

"Ah, m'sieur! it is my work, and I love it. I know what you would say; I have heard it all before, many times: that it is foolhardy; that the animals are sly and treacherous; that one never knows what will happen. That is partly true. This also is true: the lash must control them, and kindness must control them, and the mind of the trainer must control them. It cannot be done by one way alone, but by all three. Just so far can one go with them and no farther. In the end I always make them obey, but it is to be done by patience — always patience. See, now, it is like this. When I first bought Cartouche he was young, very young, and sick, for he had just come off the ship. That is the best time to take them, for they are miserable with the journey, and they see that you are helping them. And I petted him and played with him, and he thought it was all play. Then I taught him little tricks, and he learned to sit on his haunches and salute, and it was a pretty trick. But when he came to know his strength he refused to do the trick. He was not ugly, but I had to take care not to make him so. If I gave in to him in that one little thing he would not have minded me again. So every day, m'sieur, for three long weeks, did I put him at that trick, the stubborn! And when he found that he must keep at it until he obeyed, he did it. And that is the way all through. But if I had lashed him into it instead of making him see that of himself he must do it, he would have turned on me. They are part dog nature and part cat nature, these beasts, and they have all the worst and some of the best of each. A dog is fearless and very brave, with a mind that remembers kindness and unkindness—so is a leopard. A cat is noiseless and sly, springing upon its enemy from the dark, with no heart, only a head to be stroked. So also is a leopard. They are as different as people. Pierre is lazy and good-natured and fat; Plon-Plon is vindictive; Cleopâtre is very vain and sensitive, and will scarcely act before a cold house, and Cartouche is hot-tempered and quick to strike."

"And these tamed animals—" I was beginning, when her laugh cut me short.

"Your pardon, m'sieur! Not tamed animals, these; there are none such in the world. Trained animals; that is all. There is a difference, monsieur sees. But monsieur will pardon me? I go to prepare for the performance."

We left the place together, Mam'selle Gabrielle and I. On the way out we passed Reddy, who turned and joined us. At his advent Mam'selle Gabrielle's face changed subtly; the eager interest in it died away and a bored indifference took its place. Clearly there was no sympathy, much less affection, in her feeling towards her puny lord and master, and I wondered idly what stress of circumstance had brought the two together.

The orchestra played "The Blue and the Gray" indefatigably and with much spirit. There was a goodly crowd, of all sorts and conditions, all noisily happy, all chewing gum and devouring popcorn and peanuts, all on excitement intent. The atmosphere reeked with the combined smell of animals, lemon-peel, and peanuts. The lights blazed garishly; the uproar momently increased.

Reddy came into the ring presently, brave in his uniform of blue and red which clashed horribly with his hair. He looked around, spied me, and hurried over.

"She'll have a full house to-nide und no mistake, not?" he remarked with a chuckle. He was childishly pleased at the prospect of his wife's success, and chattered ceaselessly, his subject always the same. The inevitable procession wound its weary way around the sawdust ring. A fat man, very moist and shining, clambered upon a box and bellowed forth something which nobody understood.

"Mister Holt, der manager," Reddy explained, in a confidential aside. Trained dogs followed, pattering miserably around the ring and cringing under the long, keen whip. After these an uneasy elephant ambled into view and pranced stolidly through his repertoire. Always the band played and the place smelled to high heaven. During the

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elephant's turn Reddy's excitement increased.

"After the clown comes Gabrielle," he announced. "She had trouble mit dot devil beast Cartouche, und I tell her to use him nod to-nide. Some day he will go bad, und then——"

I requested enlightenment, and Reddy spoke of the inexplicable psychical disease that is liable to strike all captive wild animals at some stage in their career, known in the vernacular as "going bad."

"It is what we must always watch for in der brutes," he ended. "Somedimes we see it coming und somedimes we don't. Now, mister! She's coming."

Manager Holt, smiling widely over his vast expanse of diamond-studded shirt-bosom, entered the circular performing cage, leading Mam'selle Gabrielle by the hand. She, in a black velvet gown, with a short, heavy club her only visible weapon, made a striking picture. The fat manager introduced her in a speech which nobody heard, then backed out of the cage, and an attendant carefully fastened the door. The audience settled down into attentive silence.

Mam'selle Gabrielle opened a couple of trap-doors in the floor of the cage, and tapped with a velvet-shod foot. One by one, crowding and pushing like eager children, four slim, tawny leopards jostled into the cage and padded restlessly to and fro, sniffing the heavy air and yawning. One, whom I recognized at once as Cartouche, lay down sulkily, close to the bars, and licked his paws with a rough red tongue. Mam'selle Gabrielle turned to one beast, rubbed his back with her club, and put him through his paces. He responded readily, snarling steadily the while.

"That is Pierre," quoth Reddy. "He is old, but a good beast. So playful—ach! see how quick!"

Mam'selle Gabrielle dragged a Brobdingnagian see-saw to the centre of the cage, while the band played an appropriate melody, and commanded her "children" to mount it. Pierre and Cleopâtre obeyed, unwillingly, and stood bumping unhappily while their mistress went after the shirkers.

"Plon-Plon! Montez-là!" she ordered sharply. Plon-Plon backed away from her, swearing wickedly. She followed him up, driving him gradually towards the see-saw, talking in rapid French. But Plon-Plon was fractious, and would not do his duty. He sat on his haunches, with his paws in fighting position, and struck out scientifically, with terrific swiftness. Then she punished him, also scientifically—by no means an easy thing to do, for Plon-Plon dodged and blocked with the skill of a champion bruiser. The proper way to administer effective retribution is to rap the nose soundly, hitting up from under. It is the spot where a leopard keeps all his most tender feelings, and is much easier to reach in theory than in practice. The two on the see-saw became excited, and bobbed perilously up and down under excess of emotion. Cartouche sat at the other side of the cage, sullenly indifferent. Plon-Plon, defiant to the last, was finally overcome by a flank movement and forced on to the hated plank, because there was no room to go under it. It was all in the programme, though the audience did not know that. They applauded enthusiastically, and Mam'selle Gabrielle bowed slightly and turned her attention to Cartouche.

When she took a step towards him he slunk to his feet, and shuffled around the cage away from the see-saw. A shelf was fastened to the bars about seven feet from the floor. Almost beneath this Cartouche stopped, his short ears close against his sleek head, mutiny in every line of his graceful body.

"Cartouche!" Mam'selle Gabrielle said sternly. Cartouche looked at her over his shoulder, every tooth bared like an angry dog's. He made a vicious slash at the threatening club; then, gathering himself well together, leaped for the shelf over his head. He landed safely, though the shock of his impact made the whole structure shake, and crouched with twitching tail. Mam'selle Gabrielle stepped back, the better to view him, and, doing so, approached the see-saw. Pierre's head was within a foot of her hand. Him she patted carelessly, and the huge cat growled, but rested perfectly quiet under her touch. Plon-Plon, next to Pierre, took a hand in events. Not daring to get down from the rocking plank, he reached across Pierre, and slyly dabbed at the stick in the trainer's hand. She caught him lightly by the throat, looking squarely into his yellow eyes, held him so an instant, and released him. He put out a paw, armed with claws like so much chilled steel, looking, as he sat on his haunches, like an overgrown kitten wanting to play, and with a swinging side-stroke

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knocked the club from her hand. As she turned to get it, it could be seen that the blow, light as it had been, had laid open her arm from shoulder nearly to elbow. There was a murmur from the house. Mam'selle Gabrielle recovered her weapon, and I looked to see her chastise the offender. Instead, without a glance in his direction, she stanched the rapidly flowing blood, and turned to Cartouche.

"Will she not punish him?" I asked.

"Himmel! no," said Reddy, never taking his eyes off the cage. "We never at all punish for an accident. Only when they are stubborn or show fight. Then we punish hard. Such things are all in der business—we must take account of them, of course."

"A DANGER-SIGNAL FLYING IN STIFFENED MUSCLES AND OUTSTRETCHED, RIGID TAIL; A FLASH OF TAWNY YELLOW."

In spite of Mam'selle Gabrielle's dexterity, a few drops of blood spattered down upon the boards. She rested her club shoulder high against the bars, and called Cartouche peremptorily. Her meaning was clear; she wished to make him leap the stick she held, a movement which would bring him around to the see-saw. Cartouche sprang noiselessly to the floor, almost on the spot where she had stood, and stopped in his tracks. Mam'selle Gabrielle spoke again. Cartouche sniffed sharply, like a dog scenting game. Then he lowered his head and licked the boards with a rasping tongue.

And then?

Who may describe coherently that which followed?

A coughing, indrawn snarl, as the beast got the savor of human blood; a danger-signal flying in stiffened muscles and outstretched, rigid tail; a flash of tawny yellow. Quicker than eye could grasp it, the trainer was down, overcome as much by the terrific swiftness of the onslaught as by the power of the stroke, and Cartouche stood over her, yelling defiant triumph with dripping fangs. The band stopped with a crash, and the house arose as one man, frozen, for a heart-beat, into petrified silence. The three other animals hung an instant in the wind, their savage instincts struggling for mastery against fear and the life-long habit of obedience. But the fellowship of animal for animal in the bonds of slavery is stronger even than the fear of animal for man; and they joined in the attack. At the first sign of that rigid tail, Reddy had vanished from my side as though swallowed by the earth. Now, with half a dozen assistants, he was in the midst of the snarling, worrying mass, clubbing the beasts pitilessly with heavy iron bars. Once a trainer is down, the animals have him at their mercy—all his power over them is gone. In such case, his only hope is to struggle to the bars and raise

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himself. This Mam'selle Gabrielle well knew, and before help had reached her she had staggered to her feet, blinded by blood and terribly torn. The felines invariably spring for the throat; the trainer's head and breast were crushed and lacerated into a nameless horror. The house dissolved into a terror-stricken pandemonium; women shrieked and some fainted; men shouted for help and floundered in impotent fury around the cage.

A cry arose—

"She's down again!"

"She's dead!—no, she's still struggling!"

"In God's name why don't they kill the beasts and get her out?"

Above the tumult rang Reddy's voice, shrill and agonized:

"The firebrands! Bring the firebrands!"

On the word they were brought; and nothing short of fire could have driven the beasts from their prey. Some one opened the trap-doors, and one by one the leopards, beaten and cowed into fierce and sullen submission, were forced below. By the watch the whole thing must have been over in five minutes—minutes that seemed each an hour.

There fell an awed silence upon the multitude. Every eye concentred on the velvet-clad figure that lay huddled against the bars, a ghastly mockery of a woman, with face chewed to a bloody pulp, and blood-clotted hair. Those nearest turned away, sick and shuddering. Those farthest off craned their necks in morbid anxiety to get a look. A doctor sprang up the steps and entered the cage. The crowd parted before him, recognizing his right. He knelt beside the woman's body, and gently turned the face upwards.

"Good God!" he said softly, at the sight. Somewhere in the crowd a woman laughed hysterically.

"Can't you get these fools away?" the doctor muttered over his shoulder. "Bring me water and a sponge, one of you, and a pair of scissors. Have a stretcher ready for her, and call an ambulance."

Half the men within hearing rushed frantically to do his bidding. All they wanted was some one any one—to tell them what to do. Reddy, pale and dishevelled, still grasping an iron bar, held the basin of water, and spoke hoarsely.

"Will she live, mister? She is my wife—my little one! She must not—dear Gott!—she must not die!" His tears fell unrestrainedly into the basin.

"She may live—if blood-poisoning doesn't set in. Can't tell yet how badly she's wounded, but she'll be scarred and disfigured for life," the doctor answered hurriedly, his fingers deftly busy. He cut away the blood-soaked dress from the bleeding throat and skilfully washed the mangled face clean from blood and slaver.

"Ach, see!"—Reddy's voice rose to a scream of delight, and the crowd pressed closer—"she moves—she lives! Her eyes will open! Gabrielle! Gabrielle!"

Mam'selle Gabrielle stirred and moaned. Then she opened her eyes and stared dizzily at the sea of faces before her. Eyes—eyes—everywhere eyes—met hers in shrinking pity, and looked quickly away. They were shrinking from her—why? She was good to look at; she had always guarded her beauty as a priceless possession. Why, then, did they turn away with that look of repulsion? She raised herself slightly and looked around, her lips whitening with repressed pain. Reddy slipped his arm under her shoulders, and supported her with gentle strength, unutterable love shining in his watery blue eyes. She had always taken his love as a matter of course; but it was to these others, these mutable Many, that she had looked for the admiration, the applause, that was as the breath of life to her. And now they turned from her; their faces grew distorted to malevolent hate, . . . became blurred . . . vanished. Her head fell back on Reddy's arm as a voice at the entrance announced the arrival of the ambulance.

The doctor laid his handkerchief over the poor face, and covered the torn shoulders. The stretcher was borne carefully through the gaping throng, and the ambulance received its burden and dashed away.

During the days that followed Reddy haunted the hospital persistently, and wore to shreds the temper of the luckless attendant who ran across him, beseeching news of the beloved. He spent his hard-earned savings like water, grudging nothing that would give her pleasure. It was the only way he knew to express his love and pity, and he did it joyfully, from the fulness of his heart.

There came a day finally when the surgeons decided that the dressing should be removed. The wounds had healed well, and

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there was nothing to keep the patient in hospital longer.

The nurse in attendance gave Reddy a whispered word of warning.

"When you see her face, don't look shocked if you can help it. She's very sensitive about it, but she doesn't know the worst yet, poor thing. We tried to tell her, but she didn't seem to understand."

Reddy steeled himself, swallowed a lump in his throat, and followed the nurse into the room where Mam'selle Gabrielle waited.

The nurse took off the bandages and stepped back. Mam'selle Gabrielle's eyes were on him, eagerly, hopefully, expectantly. Reddy's face was as stone—only his eyes changed in spite of himself. It was worse—so much worse—than he had feared. That scarred, battered, misshapen visage the face of his stately, beautiful Gabrielle? Dear God, what a fate for her! It was more than horrible—it was grotesque. Yet under all his pain came a thrill of joy because her eyes had sought his first of all, had asked him first what the verdict was.

"I am so glad the things are off," said Mam'selle Gabrielle, with a sigh of relief. "Now, please, I would have a glass to see what that bad Cartouche has done."

Reddy started, and the nurse said gently:

"Don't you think it would be best to wait till to-morrow? You are tired now, and you must not mind if——"

Something in their faces warned her of what was to come. She spoke with all her old imperiousness.

"The glass! I must know sooner or later. It must be very bad that you will not let me look at myself!" She turned to Reddy, and again her eyes searched his too-impassive face.

"Give me the glass!"

And Reddy handed it to her.

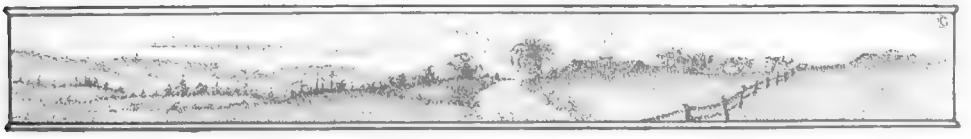
She took it, gazed into it eagerly, and her whole face changed indescribably. Amazement, horror, shame, and rage strove in the distorted features for mastery. She drew a shuddering breath that whistled through clenched teeth, and looked again, as though she would burn the reflected image on her brain.

"Mon Dieu! mon Dieu!" she muttered hoarsely. "Es' que c'est moi—Gabrielle Laforge?"

She looked stealthily around at the group beside her. The nurses and surgeons had moved aside, and regarded her with a pity that bit as deep into her as the shrinking of the crowd had done. Only Reddy stood near, hovering over her tenderly and longingly. Remembering past repulses he dared not touch her, though he yearned to hold and comfort her as he would an ailing child. Again she stared into the glass, fascinated, horror-struck. The battle against the inevitable that went on within her was fought silently, in the depths of her stricken soul. It was no dream, but a living, terrible fact. Never again would she charm her audiences with her beauty as of old; she would live and die a hideous caricature of her former self, a thing to be stared at and commented on, to be viewed askance or with brutal curiosity; to be pitied. So she sat motionless, trying to adjust herself to the fate that grinned in her face, and the struggle burned deep into her pride and into her heart, and left her dashing herself impotently against the inexorable reality. It was all so natural and so pitiful and so sad!

While they watched her she turned and looked at Reddy carefully, to see if he would act as others had done. Upon this point she had become morbidly sensitive. She studied him as though seeing him for the first time: the carroty hair, the watery, kind blue eyes, the wide, good-natured mouth. Something else also she saw there, poor child, and at the sight her scarred lips quivered. She stretched out her hands to him, silently, appealingly, as a tired child might who sees its mother's arms waiting. Reddy caught her to his breast, and she hid her face from the eyes of men upon his shoulder.

So Reddy the faithful came into his own at last.



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A Dutiful Daughter

By Elisabeth Sutton

Illustrated by George Albert Shipley.

MRS. FENTON sat in a rocking-chair by the open window and bent over some sewing. She was a slim, dark little woman, with iron-gray hair brushed back smoothly from a slanting, wrinkled forehead, and deep lines furrowing her face from nose to mouth. She still wore rusty and much patched black for the husband who had not been good to her and was dead fifteen years. Over at the table, Mary Alice, her daughter, hulled strawberries. She also was spare, and little and swart like her mother, but her eyes were softer and kindlier than the woman's, and there were gentler lines about her well-shaped mouth. She was thirty and looked much older.

She suddenly glanced up from the berries.

"Mother, Wednesday night John Mason asked me to marry him," she said, and a touch of warm color flushed into her sallow cheeks. "Can I have him?"

Mrs. Fenton's sewing dropped to her lap. She folded her arms and turned around in her chair so that she might face the speaker.

"Well, I declare. So at last he's hed the gumption to pop; after ten years, too. Well, if that don't beat me. After ten years akeepin' steady comp'ny to up an' ask you now! Wensday night, you say? This's Sunday, Mary Alice Fenton. Is it only now you've thought to tell me, your mother?" She picked up her sewing and began to stitch furiously. "In my day children acted different with their parents. They knowed how to honor an' respect them. Wensday night, an' only now you tell *me*."

Then she raised her head and looked across at the girl in time to see her abstractedly put a strawberry in her mouth.

"Mary Alice," she snapped, "if you go an' eat all the strawberries there won't be none left for tea."

"I only took one," Mary Alice hastened to explain humbly.

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"Don't take none, which will be less," her mother commanded.

"Mother, John wants my answer to-night," Mary Alice persisted. "Can I have him?"

Mrs. Fenton laid down her sewing again.

"Mary Alice," she began, "far be it from me to say anything agin your havin' John Mason. Far be it. But mebbe you'll tell me what'll become of *me*, your mother, when you'll go off an' git married. I suppose it'll just be the poor-house for me. I'm not ez young ez I used to be, an' I can't go out an' work. I suppose it'll just be the poor-house. Well, well." And she kept nodding her head slowly, saying, "Well, well."

Her daughter's voice shook unsteadily. "You make me feel very badly, mother, talking that way. Why you will come to live with us, of course—with John and me."

Mrs. Fenton stiffened up very straight.

"Mary Alice Fenton, I'll never live on any one's floor but my own, please God. If I break up the home—an' of course I'll have to when your pay's gone—I'll go straight to the poor-house. But far be it from me to say one word agin your marriage. Far be it. You go ahead an' marry John Mason, an' your mother, who wuz a good mother to you, Mary Alice Fenton, an' raised you good, ez every one in Boisville knows, ez every neighbor kin testify, will go to the poor-house."

The girl's face grew haggard.

"Mother, I like John Mason very much. All these years I have encouraged him; given him to understand that I would marry him. Can't you see, mother, that I must marry him?"

"Go ahead an' marry him. Who's a-stoppin' you?" Mrs. Fenton said. "I'm not the first that hez went to the poor-house. I'm not the first that hez brung up a bad child."

"Mother, I am not undutiful. It is you who are most unjust with me."

"There, that'll do," Mrs. Fenton cried. "I'll have no child of mine givin' me impudence. It's bad enough, Lord knows, to have an ungrateful daughter, but it's more than one kin stand havin' an impudent one. Go ahead an' marry John Mason without abusin' me over it. I'm not goin' to say one word agin it; no, not a word. You're just like the Fentons. Not a drop of my blood in your body ez I kin see. You don't take a bit after me. You're ez selfish an' unnatural ez you kin be. I could always see that. You take after your pa's people, who wasn't much, God knows. You marry John. You'll never have it to say I did anything to stop you. Have him, an' I'll go to the poor-house. You kin take your choice between John, an' me goin' to the poor-house, so there you are."

The girl leaned forward. "Mother, do you really mean that you will go to the poor-house in preference to living with us?"

"I mean just what I say," answered Mrs. Fenton, decidedly. "I'll go an' become a pauper on the town if you marry John Mason."

The blood hummed in Mary Alice's ears; she arose from her chair, her eyes bright and dark with anger. She was going to say many things. That if her mother was so obstinate and selfish she deserved to become anything she wished, even if it was a pauper; that she had no right to destroy her daughter's happiness; that if she were a natural mother she would never do so.

The girl looked at the gray-haired woman, with the deep lines seaming her face, and the indomitable chin. She would keep her word, she always did, and go to the poor-house. Mary Alice sat down again without saying a word, but her hands were clinched until the knuckles shone white, and the nails sank into the flesh of the palms.

"Very well, mother," she said; "I won't marry John Mason."

"Oh, have him," Mrs. Fenton advised in indifferent tones. She knew she had conquered. "Have him, you're that set on it. In my day girls hed more modesty in them. Now it's all different. I kin see you're fair crazy after him, so take him. You'll never be able to tell how that I did a single thing to prevent it."

Mary Alice swallowed hard. Her dark eyes were filled with tears. "What will everybody say? What will John say when I tell him? After going with him for ten years! Besides, I am thirty. It will be my last chance." She looked wistfully at her mother, but the woman had resumed her sewing, and her mouth was grim. Then the girl bent over the berries again. "There is nothing left for me to do but refuse him. I shall tell him to-night. Oh, dear, what will everybody in Boisville say? What will poor John say?"

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"Mother, I shall tell John to-night that I cannot marry him," she said aloud to her mother; and Mrs. Fenton, after sewing a little while silently, then declared, "Well, after all, you do take after me in some things, Mary Alice. That's just what I'd a-done for my mother. You're not altogether like the Fentons. You have some of my ways in you." The woman looked utterly satisfied.

That evening a few minutes after eight Mrs. Fenton called upstairs to Mary Alice, "Mary Alice, John hez came." The girl, who had been ready and waiting half an hour, slipped down to the parlor.

John, a very stout, red-faced young man, was standing at a table looking over the family album. He immediately put down the book upon Mary Alice's entrance, and walked over to the black hair-cloth sofa in one corner and seated himself. Then he patted a place beside him and looked over with a playful smile at the girl. John always went through this performance and Mary Alice, always after a series of shy giggles and blushes, would seat herself beside him gingerly and on the very edge of the sofa. But to-night she stood in the centre of the room and twisted and twisted into a hard little ball her handkerchief. Her eyes showed traces of weeping and her poor little face was puckered up with her emotion. "No, John, I can't, not to-night. And I want to tell you something. I want to tell you that—that—I want to tell you that I can't marry you!"

Then she was silent and looked with frightened eyes at her lover.

John slowly pulled out a great red cotton bandanna handkerchief from his pocket and started to wipe carefully away the beads of perspiration that had suddenly started out on his forehead. He looked terribly dazed. "Why, Mary Alice, what has struck you? You are just fooling now, aren't you?"

"No, I am not fooling," Mary Alice answered. "Do you think I could fool on such a subject, John? I just cannot marry you—I cannot, John."

"State reasons, state reasons," John said, in businesslike tones.

"Well—well—oh, John, my mother does not want me to get married, at least not yet," the girl answered, in a trembling voice.

"For God's sake when does she want you to get married?" John burst out. "When you are fifty, eh?" He laughed disagreeably. "I've been coming here long enough for her to say that before this late day. Are you going to do what she says?"

"I shall have to do just as mother wishes," Mary Alice said, in a thin, little voice. "I always do. I'm awfully sorry, John. Indeed, I liked you. I'm awfully sorry."

John stood up and stuffed his big bandanna handkerchief into his pocket. "Well, all I can say is that you'll be sorry. It is easy enough for a man to get a woman, but not so—easy for a woman to get a man. I guess you are about losing your last chance, Alice. Well, I guess it's not any of my funeral," and John tried to look jauntily indifferent, but failed. He reached the door and stood there with his hand on the knob. "You don't think you might change your mind, eh, Alice?" he asked, and gazed wistfully at her. "You are old enough to do just as you please. Why don't you marry me whether she wants it or not?"

But Mary Alice cried out, sharply: "Oh, I could not, John. I must do as my mother wishes."

John opened the door and stepped into the hall. "Well, I guess you'll regret it all right," he said.

Mary Alice leaned toward him and put a hot little hand on his coat sleeve. "John, I shall regret it whilst I live. But I must do it for my mother's sake. Be sure that I shall always regret it."

"Yes, I think you will," John answered. "Well, it's not my funeral," but he looked as if it was; and then he backed out of the front door, turned down the stoop, and walked briskly away.

Mary Alice stood where he had left her and watched him until he had disappeared from view.

Three weeks later, when Mary Alice reached home one evening from the factory, she was quite astounded to find her mother bustling about the kitchen getting supper ready, attired in her best black gown—one never worn but on Sundays. But the wonder of it all was that Mrs. Fenton had a ribbon of cherry-colored silk twisted about her neck and tied in a huge bow underneath her chin—her mother who had not worn a bit of color for fifteen years. Mrs. Fenton's hair, too, was elaborately frizzed, and stuck into the faded gray knob on the top of her head was a tortoiseshell comb that had belonged to maiden days. Mary Alice was so

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"MARY ALICE LEANED TOWARD HIM AND PUT A HOT LITTLE HAND ON HIS COAT SLEEVE."

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surprised she did not remove her hat and coat at once, but sat down on the nearest chair, and gazed wide-eyed at the woman.

"Well, what yer lookin' at?" Mrs. Fenton said, but not ungraciously. She felt at the bow underneath her chin, and the comb in her hair. Then she went over to the mirror hanging above the table and took a critical survey of herself, twisting her head about in all directions.

"What yer lookin' at?" she asked again, when she turned around.

"Why, mother, where are you going?" Mary Alice asked.

"I ain't goin' a place," her mother answered.

Then she came up quite close to the girl.

"Mary Alice, guess who's a-comin' to-night to see me. Just guess." She bent over the girl and said slowly, in most impressive tones: "Martin Schwartz, the butcher! He up an' ast me to-day, when he brung the meat, to keep comp'ny with him. Oh, men is sly, I tell yer." Mrs. Fenton chuckled pleasantly. "Who'd a-thought he hed his eye on me all the time? But so he did. Well, Mrs. Schwartz hez been dead goin' on five years, an' my man's been gone fifteen, an' wuzn't good to me, so I guess nobody kin say anything. I always believe in not givin' any one anything to say. Well, he's a good man, an' that's all a woman kin ask or git. I don't think red looks half bad on me, eh, Alice?"

Mary Alice did not answer her. She took off her hat and coat and sat down at the table to supper. But there was a lump in her throat to prevent her eating. Mrs. Fenton talked and talked of Schwartz, the great fat, vulgar butcher, and was so preoccupied and interested in her own happiness that she failed to notice the distress of the girl. Finally Mary Alice got away from the table, and immediately went upstairs to her own little room in the attic. On a table in one corner was ink, a pen, and some writing paper. Mary Alice took up a sheet of the note paper and, dipping her pen in the ink, started to write:

"DEAR JOHN,—I was all wrong. I have changed my mind. Please come back to me. I am not going to give up everything for mother. She would not do the same for me. Dear John——"

The light was getting so bad Mary Alice laid down her pen, and, going over to the one small window, threw out the shutters. Two were coming down the village street together. Mary Alice leaned far out over the window-sill to watch them, for both seemed familiar. They came near, and passed. One was John Mason, and leaning upon his arm was the prettiest and silliest girl in the village. Mary Alice pulled in the shutters again, and taking her unfinished letter, she tore it into tiny scraps. Then she threw herself upon the bed, and buried her wet face in the pillow.

PERSEVERANCE.

BY ALOYSIUS COLL.

HOPE hid the timidness of doubt,
And knocked again where she had been
A supplicant for years and years—
But never yet had entered in.

Then Faith, aroused from dreams at last,
Opened the door. "Ah, I had been
Sleeping," she said, "until you knocked;
But you are welcome—enter in!"

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TANGLED UP IN BEULAH LAND.

By an Author.

III.—WHERE IS TUSKALOO?

IT was a nasty May day when we locked our rooms and saw our traps loaded on an express wagon. A sharp, wet wind was blowing from the northeast, bringing flurries of aggravating crystals and boring into one's marrow acutely. It required considerable moral determination on my part to abandon my comfortable quarters and my easy habits and go blindly forth on such an uncertain chase as this in the teeth of an acrid spring.

Neither of us had a very definite idea of where we were going or what it was we were to accomplish by going. But I am quite sure that each of us held stoutly to the vague notion that it was a stern duty to get the other away.

I must say that Charlie kept up the appearance of bravery at the start much better than I did. He fussed about with what looked like resolute energy, as if he were a little afraid I would change my mind if he did not get me started immediately. But what does a fellow of his age know or care about weather or definite destination? I was glad to get into our comfortable section on the train, for the city we were leaving was about as woebegone under the spring infliction as I had ever seen it—business trying to execute itself under futile umbrellas, plunging about in sticky and slimy streets; leaden skies hanging low and emitting wintry blasts fitfully.

I could see the look of relief on the young rascal's face as we took possession of our compartment. He was saying to himself, "I've got him landed, anyway; and now if his old friend the Doctor does not keep him out of mischief when he understands the case, then I deserve to have Madame Cold-cream for a keeper."

I forgave him easily, because I could not bring myself to believe that he was reading me as well. He must have been joyously ignorant of the fact that I was saying to myself, "I've got the scapegrace started, and if he gets away from my friend the Doctor, when the Doctor understands the case, then I deserve to have a dancing soubrette, or whatever the thing may be, for a daughter."

Just exactly into what kind of a country we were plunging by the aid of our self-sacrifice, neither of us knew. Tuskaloo might as well have been in Thibet or hid away in the Carnac Alps, as far as our knowledge extended. The Doctor had on one occasion referred to the domain that had swallowed him up as "Beulah Land." Whether this was his affectionate way of labelling things that took his eye or was so set down in the surveys, I had not the faintest idea. If Charlie had asked me as we sat there what kind of a place Pennsylvania is, I presume I should have answered in a large and comprehensive way that Pennsylvania is the Keystone State, crossed diagonally by the Appalachian chain, with three great terraces respectively inhabited by Moravians, Scotchmen, Quakers, and rattlesnakes, and beautifully traversed by thin and noble rivers. Perhaps I might have expressed the conviction that Pennsylvania is a barbaric domain that is always committing a sort of commercial hara-kiri and disembowelling itself of coal and iron and other intestinal products for the benefit of mankind and the much smudging of itself.

But Charlie had not the slightest curiosity about the matter. He settled himself comfortably over a novel, and had evidently made up his mind not to look out of the car window or in any manner interest himself in our destination. He would be satisfied to get there and see me safely entangled in an old friend's hospitality. Then he would find some excuse to hurry back to New York and have the full swing of our rooms.

Before we reached Harrisburg he had the car window open and had relinquished his novel, for the spring, full-blossomed, was coming up that way. He noticed that the sunshine was quite yellow, the air was heavy

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with the scent of lilacs, and the glades were already purple with the hepatica.

The traveller leaves behind him at Harrisburg most of those familiar reminders of a common country, and thereafter slips easily into what is distinctively Pennsylvania. But if he is unburdened, as we we were, by personal or commercial predilections, he accepts the new conditions as he penetrates them, with a comfortable wonder and a calm zest, and thinks of them as belonging not so much to Pennsylvania as to a pleasing picture that defies locality. As he reaches the Juniata and turns north to Mifflintown, a new and serene pastoral world welcomes him with pleasant outstretch. It remains, to all such persons as come that way for the first time, to discover the Juniata for themselves, and to wonder, as so many Englishmen have done, why they have not heard more about it. But it is when the vagrant traveller takes the great bend southward again at Mifflintown, in obedience to the graceful sweep of this river, and spins along between the Black Log and the Jacks ranges, half the length of Mifflin County, in a vale beside which Tempe would be rude and gaunt, that he feels himself rather voluptuously entering Beulah Land. He may at some time have called Maine and New Hampshire and the Berkshire Hills in succession the Switzerland of America. We all do. But when he reaches this spot, he is very apt to give over all that nonsense and call this the America of America, as if it were the heart of it, and wearing upon its plateaus and meadowy pleasances, and waving in its gonfalon surprises, high up the timber line, a constant suggestion of calm, beauty, and remoteness. The railway has pierced its secret with iron, but it could not destroy it. The charm that hangs heavy on its gladdening pictures is like a Sabbath yesterday; and whether the scenes are English or Scotch, whether they are like Lombardy or Brittany—and they are like all of these in succession—they preserve for us the picturesqueness of nature and the thrift of a happy and contented people in such combination as one will find nowhere else. And always it is the beautiful river that does the chief beguiling. It is so flush and exultant and joyously companionable, growing under your eye more voluble and capricious as it narrows towards its source in the mountains; springing upon one unexpected *tours de force* of shadowy pools and silver reaches; little enchanted islands, fantastically embowered, scurrying past; and fringed margins of poplar and larch leaping into masterpieces as the eye grasps after them. Other rivers lend their presence to man soberly on his journeyings. This little river accompanies him like a true artist, and forever thrums, now softly and now wildly, on the lyre of God.

Somewhere, far down this legendary vale, lying in the silences, is Tuskaloo. One does not stumble over it as if it were an advertisement. One has to hunt for it as if it were a sentiment. It is encompassed by what remains of the grandiose American forest—that stupendous coverlet that once spread over this State and canopied Kentucky and Tennessee on the other side of the great range; out of whose trackless glooms the Indian peered in war paint, and under whose endless apse civilization had to hew its way when it went up to possess the land.

Some insistent commonplaces of travel may have fretted us as we neared our destination, but I have forgotten them. There was, of course, the regular railway station. I believe there were heads of through passengers thrust out of the train to see, if possible, why anybody should get off there, and then the train left us to the mercy of a lumbering stage-coach that swallowed up our traps and invited us to be swallowed up ourselves as it cried aloud, "All aboard for Tuskaloo."

Charlie bravely kept up an appearance of interest, and inspected the homespun and tow-frocked inhabitants, and remarked to me that it was Arden peopled only with Audreys; to which I replied, "Yes, my boy, I know, I know. But we are doing the 'Midsummer Night's Dream.' Let us keep our repertory straight."

To be rolled away over cushiony roads, already padded with grass and moss, our vehicle giving back no other sound than the stretching and flapping of its leathers, and to be brushed by blossomy boughs, and to sniff the arbutus that our wheels crushed—always confronting that little river at unexpected moments, to hear it cry out liquidly, "Here I am again"—all this was to slip submissively enough out of accustomed life into Tuskaloo, which was something slumberously incredible to men so lately escaping from the thousand fangs of sound.

It gave me a Rip Van Winkleish feeling

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to be set down in front of an old tavern, with a swinging sign on the green in front, and, as I live, indubitable evidences that human beings played bowls there—probably in the twilight.

It was difficult to restrain one's archaic inclinations when thus plumped, as one might say, into the eighteenth century. I came perilously near to saluting the tavern-keeper as mine host, and swearing he was rubicund, which he was not, and ordering a flagon of wine to begin with. Airs of Provence or of Arcady blew his scraggly white locks about, and he wanted to know if "you be the gents Boylston's got to fetch."

Boylston! Fifty years came trooping back with that word. It had "fetched" me long ago when I went to singing-school in the basement of the old stone church.

"I guess," said Charlie, "we shall have to foot it. How far is it to the Doctor's?"

"Goin' on two mile or thereabout. I reckon his team may hev got stuck," said the tavern-keeper. "Will yer step in and hev suthin'?"

We thanked him decorously as if we owed him some kind of apology for breaking into his country, and Charlie, who was an object of interest to several red-faced girls behind the adjacent blinds, whose "te-he's" escaped through the openings, remarked that it seemed to be a nice, quiet, agricultural country.

He was probably thinking of the girls in fleshings that he had left behind, and I merely said:

"Yes; we shall miss the influence of those discreet women of the world who lend such a charm to real life, not alone by their graces, but by their wisdom."

He turned away with a little jerk as he said rather testily, "Oh, we didn't come down here, Dad, for that sort of thing."

"Certainly not," I replied. "So we'll just take a lungful of it and scurry back among our kind."

"I shouldn't think," he observed, "a man of your age would want to do so much scurrying. Now that you are here, you'd better make up your mind to stay a while."

"You shall have it your own way, my boy, but I'll be hanged if I'll stay here alone."

Before we could exchange any further condolences, a stout, handsome equipage, drawn by a pair of high-stepping bays, came up, carrying Boylston on the front seat as easily as the Doctor had carried Union Pacific when it broke five points.

Boylston touched his hat and pointed with his whip. He evidently wasted no words on the obvious. It was late in the afternoon when we were once more rolling toward the Doctor's, this time at a gallant pace. Everything glistened and flashed, and the sweeping boughs now and then sprinkled us with iridescent drops.

"Sun-shower half an hour ago," said Boylston, and then relapsed into the general jingle of our ongoing.

We saw the drifting pigments of the shower scumbled in the west, in the gaps of the mountains, as we came out of the woods, roiled lakes of fire and blood and gold, with the evening shadows creeping upon them, but still throwing great shafts of color over the vistas, so that the meadows were molten and the jutting crags were rimmed with crimson. And still the little brimming river, flashing in and out upon us with its deepening darks, like nature's own corybant.

Just this dash through glades and groves, smitten now by the damp odorous breath of a bottom, pink with the azaleas and wild rose, and spicy with the tender birch and sassafras, and now coming head on into the full blazonry of the dying day, flying as if pursued by the scented evening. And then, turning in at the gravelled walks of a park, and coming all at once abreast of a large colonial house peering through the trees, on the broad veranda of which was grouped the last tableau into which our panorama had resolved itself with finishing magic.

Years had whitened but not denuded the Jovian head of the Doctor. Indeed, the frost of time was more like the jolly frost of a wedding-cake that is made to keep; and his ruddy, frank face accepted the snow as a good picture of Ajax, grown old, will accept a new mat. Still as erect and hearty at seventy as that Mingo chief whose hunting lodge was once on this very spot, he held out his arms to us, laid his trip-hammer hand on Charlie's shoulder as if he expected him to bend a little in the knees—which a father's pride may be pardoned for saying parenthetically he didn't—and turning him round as a recruiting sergeant might have done, said in well-remembered tones:

"Great Scott, and you are the young rascal I used to carry on my shoulder! Io,

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my dear, I present to you an old friend in our young guest. Polly, attention, eyes front! This is serious business. Polly is my niece. Take him away, girls. He is reeking with city. Have him fumigated and put him in the haunted chamber."

Io and Polly were not to be driven out of their proper reserve by this gustiness, and Charlie, I observed, did not come to this part of the tableau so stoutly. I think the sudden apparition of unexpected loveliness rather took his breath away. However, I can only judge of the matter by myself. Some kind of a notion floated through my head, swiftly enough, that the Doctor had offered a prize for the handsomest girls in Mifflin County in order to strike us dumb, which notion was in ridiculous contrast to the matter-of-fact pair of them who stood in the doorway, and tried their best to look as if the arrival of Charlies was of hourly occurrence, the novelty of which had long since worn off.

After introductions, this part of the tableau melted away through the doorway, my contribution to it going humbly enough along, followed a little way by an old negro in a dress coat from another generation and race, which coat was very much wrinkled in the back. He carried a whisk broom, and I was left to be properly explained and generously exalted to the Doctor's sister, a quaint relic of other days, fragile and softly spoken, in sober, trim attire, with a pink flush in her cheeks and a kindly sparkle behind her spectacles. So curiously like a delicate heirloom did she appear, that one was a little afraid the Doctor's breeziness would knock off an edge; but one soon enough saw that the Doctor's bounce had long since been adapted to this gracious light of other days. She had a way of involuntarily putting two fingers over her lips just before speaking, as if her remoteness, so like the spirit of Tuskaloo, might become oppressive, which was rather aggravating, for I am sure that everybody wanted more of it, as he always does of a lost ideal. Something in the gray kerchief round her neck, but more in the soft, equable perspective of her manner, invested her with a far-away charm, as if some Quaker ancestor—perhaps Penn himself—had insisted on peeping out of her, with occasional "thees and thous," all the more delicious, like that kerchief, because they did not quite agree with the present. Her stately courtesy had something aërial about it, as if it were always seen through the haze of years, and it is worth saying here that, long as we stayed at the mansion, we never heard her called anything but "Mother" by each and all, not one of whom had any other than a tacit metaphor to stand upon.

Some women bear with them into old age ancestral rights that make the whole world kin.

Thus were we landed softly enough, but to our glad amazement, into the manorial heart of Tuskaloo, where life went on with whelming gentleness, like that little river, making, as it seemed to me, green pastures and sweet cloistered demesnes that, even to write about, now that I think of it, is perilously near to impertinence.

I suppose all fairly rounded-out men—that is, rounded out by protean life itself—come in their ascending spirals to that point when it is no longer possible to go forward with their zest without going backward with their desires. Heaven slowly shifts its position from the clouds and reappears behind us in the memory. But how few of us can retrace our steps or renew our zest! In this respect the Doctor loomed up to me as a favored paragon, and I must have said something like this to him, as we stood alone on that porch, he in a nankeen jacket, and I listening to the tinkle of a bell somewhere in wet meadows where the cows were coming home. But he blew me out with his hearty breath as if I had been a mere tuppenny dip of sentiment.

"Now, none of your confounded introspections," he said; "I will not have it. Did you not notice my sign on the gate? 'All analysts are forbidden to trespass on these grounds under penalty of the law'—the common law of healthy existence. You are hungry—why waste your breath? Dinner is waiting; I hear Io ringing her voice."

The château air of that dinner was very perceptible, eaten as it was under wax candles, in a wainscoted room that had once been white and gold, and still had carvings that held up the mantle, over which hung a portrait of Logan in his war feathers. A coiffured picture or two on the walls seemed to be dimly dancing a dusky minuet in the candle-light as if they might be memorial shadows. The great gap between all this and all that which we had just left grew momentarily. But there was the tableau as if arranged at the board by Teniers him-

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self, and, like all good pictures, carrying its own warning that all else was subsidiary. Io could not very well help being the focus of this group. My first impression of her was distinct and peculiar enough to be definitely recalled.. It was one of those cases, common enough, I think, in which it is recognition that baffles you. Io I had certainly never met before—indeed had never heard of her—and yet the first time we looked at each other I remembered her. Something in the beautiful face was familiar. It was not outline, but an evasive expression, an expression for which I can find no other word than that of familiarity. I suppose we all hold some qualities in common, and they shake spiritual hands when they meet.

I thought afterwards, in trying to recall where I had seen anything like her, of a picture I had once observed attentively in the old Vernon Gallery in London—I believe it was by Copley—and the immature stateliness and tenderness of the white face, so simply framed in by soft brown hair, seemed to me at the time to be strangely fascinating. I have since looked at a print of that picture, and it was not at all like Io, which only shows how we carry an archetype in our minds and go about placing it on other person's canvases. Io looked nineteen. I learned afterward that she was much older. I felt sure, however, at the very start that she did not know exactly how superior she was to the artistic eye. How could she in that place, where there were no artists or flatterers to be always bothering her about the curve of that white neck or the pose of that head?

Have you not, now and then, met young women who appeared to be ignorant of their supreme endowment of personal charm? You reply, "Impossible. If they are not born self-conscious, they acquire self-consciousness from the atmosphere they breathe." True, but I only said appeared to be. Feminine charm is not declaratory, only suggestive.

As for Polly, I understood at once that she was indigenous. She and the Juniata came up together. A round, vital, effervescent domestic soubrette, with a delightful snub nose on which two or three freckles had lit, and a red, restless mouth full of little, white teeth, not made to bite, but merely to accent volubility, like the high lights in a clever oil painting.

To be made the principals in such a sextet, written, one might say, by Lully, but played by Liszt on a modern instrument, only seemed to heighten the necromancy of our introduction.

The Doctor was superbly patriarchal at the head of his table, without allowing his accumulative years to obscure his imperishable youthfulness of spirit. He had slipped somehow from a nankeen to a velvet jacket, and cast behind his chair that colonial shadow of a servitor in a white apron and wrinkled, shad-bellied coat, as straight as self-respect and tradition could make him, and holding his waiter against his breast as he rolled up his eyes in patient decorum.

One felt at once that affection allowed the Doctor's full galloping candor many liberties that would have been gruff but for the constant declaration of his face that they were merely temperamental extravagances. He informed us promptly that he was additionally glad we had come, for Polly's sake. Live men were necessary occasionally, like cold baths, to dispel the imaginary men. He really believed that Polly had begun to write poems to Boylston. Whereupon Polly explained our host as a dear old reminiscence, who would be an inestimable uncle if he were not such a traditional doctor, and did not insist on continually treating his family as patients. "I never had a pulse in my life," said Polly, "that his finger wasn't on it."

"My dear," said the Doctor with splendid amiability, "in old times we used to judge of a girl's condition by looking at her tongue. We no longer need to do that. We only have to listen to it."

Even Polly laughed, while she replied, "I never wrote a poem in my life. I couldn't; besides there is nobody here who would understand it."

"You did not need to," I observed with what I thought was the proper courtliness of such a place; "you probably lived it, which was better."

Charlie and Io, who were directly opposite and ridiculously proper in their fear of each other, looked at me, I thought, with a little envy of my age that could say such things, and so I proceeded:

"Doctor," I said, "we set out for the wilderness, and have arrived at Mount Ida."

"Nonsense," exclaimed the Doctor. "Just plain Tuskaloo—and Indian. I suppose you think you are on Mount Ida because you have Io in front of you. It isn't Grecian.

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It's wild Western, and means that our goddess was born in Iowa—Cedar Rapids, wasn't it, my dear? They abbreviate everything out there except the girls themselves."

"That's just it," I answered. "Charlie and I set out to discover Arcady, and an Indian river flirted ahead of us and seemed to call out, 'This way, gentlemen; open your eyes and shut your mouths.' It would have reminded us of an actress, if your river had called itself the Tiber or the Rubicon."

Charlie gave me a quick, inquiring glance, but I flatter myself I preserved an innocent aspect, and Polly broke out:

"Tibers are yellow," she said, "and Rubicons must be red. Fancy a river that is celebrated because somebody crossed it—who was it? I tried to paint the Juniata because it is always blue, and uncle said I must get a multiscope. What is a multiscope? It sounds like a chorus."

"A multiscope, my dear," said the Doctor, "is a new invention for adding motion to meaning. They must have even statuary on the jump in the large cities. The Juniata," he added, addressing himself to me, "is the only river that in its sources we have not annotated with canals. The Susquehanna always reminds me of a biblical commentary with its marginal readings and foot-notes. The travellers follow the stream as does a biblical student, without touching it."

"When uncle goes to Harrisburg," said Polly, "he wants a canoe, and would sit in the end of it wrapped in a blanket, and rail at the world with a paddle. And he can't paddle a bit. I've tried him, and he upset me."

"So I never go to Harrisburg," replied the Doctor with unfaltering good humor. "I wait, and if everything doesn't come to me at Tuskaloo, I count it gain."

"My," observed Mother, as she pressed her fingers to her mouth and gave way to a mild foot-note herself, "I am sure we should not have gained anything if our guests had not come."

"Oh, it's too early to judge," cried the Doctor. "Wait till we see how Polly acts."

Then we all laughed heartily, including Polly.

Late that night, when Charlie and I were alone, and had shut our defensive chamber doors on the circumambient hospitality, he looked at me quite seriously and said:

"Did you know of these girls, Dad, before we came?"

"As I hope for mercy, Comrade," I said with unnecessary earnestness, "I never dreamed of them, much less heard of them, till this evening."

That seemed to clear his mental atmosphere of some kind of suspicion, and I added:

"I don't think any dream would have approached the reality, my boy, do you?"

"Very charming, homelike ladies, I am sure," he replied. "I wonder if there's a post-office in Tuskaloo."

This kind of stubbornness aggravates a man of sixty. "Confound your cucumber soul, my boy!" I exclaimed. "When I was your age, I would have burst into a blaze of enthusiasm if an Io had crossed my path. Egad, sir, one did, and you're a living proof of it. Why, sir, at such a meteor, as Gray says,

> 'E'en from the tomb the voice of Nature cries,
> E'en in our ashes live their wonted fires.'

Go to! If I were as free as you are—ahem!—I'd have a throne built in my imagination in half an hour for such a girl as that. Don't she remind you a little of Madame Coldcream in her poise of character? Perhaps you couldn't study her as well as I could."

The look of disgust that came into his face as he turned away induced me to soften my strain.

"Anyway," I said, "you must understand that it would be a blessed thing for our forlorn stock if we got such an ideal as that into it. Yes, sir, it's worth some self-sacrifice, and, by Jove, if I were a free man, I'd make the sacrifice, for I am not as *blasé* in my feelings as you are."

He walked away and mumbled something to himself. I asked him what he was saying.

"I was only saying," he replied, as he sauntered out, "that if you look at it in that way, and there's got to be a sacrifice made, why not offer up Madame Coldcream?"

Then he was gone. I went to bed, where I lay for some time punching myself in my imaginary ribs, and wondering whether my Prospero of a doctor had brought an Ariel or a Miranda to my assistance.

(*To be continued.*)

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LIBERTY.

THE STORY OF A TURKEY'S LIFE.

By Maximilian Foster.

Author of "In the Forest."

A SHAFT of sunlight pierced the interlacing tree-tops and fell broadly upon the forest's yellow floor. Spring had come, and with it the woodland life moved anew. At the foot of the knoll a sandy brook rippled briskly through the covert, singing a quiet tune; and the air now stirred gently from the south. Higher rose the sun; the breeze died away, and with one last, listless whispering of the foliage overhead, silence reigned. Then—*putt-putt*—a sharp and querulous *putt!* Another moment's silence, and after it, as if in answer—*ye-onk—ye-onk—ye-onk!* Now what was this? Out of the thicket stepped majestically an impressive figure, a creature of cardinal crown, garbed with bronze and gold, stalking the brush like a veritable monarch of the domain. *Ye-onk—ye-onk!* Craft, curiosity, suspicion, invitation—all were sounded in that sonorous yelp. *Ye-onk!* Onward stepped the regal presence, confident, yet ready to fly at an instant's warning; primed for braggart wooing—doubtful on the way to conquering. So up the hill went this majesty—forsooth, a turkey gobbler—making his way with a hop, skip, and stalking stride, his cardinal crown held sideways, and no end of expression in his undecided, mincing gait.

Putt—putt—ye-onk! That settled it. The voice of the charmer on the hill-top sounded clear and sweetly low. There could be no cheat in a dulcet yelp like that. Up the last rise bustled the gobbler, all his craft suffused by the glow of amorous conquest, his fan spread in astonishing array, his wings curved sidewise, and his gallant wattles swelling in red display. Drumming noisily, he strutted the opening, and there before him stood the charmer.

Now the bar-sinister of turkey bearings is a band of white across the tail: rarely found among the wild birds of the forest depths, though every mean fowl of the farmyard shows it in its fan. So was this charmer of the hill-top marked—a recreant from some squatter cabin. But what cared the amorous knight for this? Little, indeed! He spread himself before her, regardless of his other queen grubbing a breakfast in the deserted cotton-patch below, and with all his bravery stalked and strutted and clucked till she was hypnotized into delirious attention. *Ye-onk!* spoke the lady-love softly, timorous in adoration. Swelling his snaky neck, he fixed a beady eye upon her, and then rang the woods with his song of love—*hee—gobble—hobble—gobble!*

Nature, with all her admirable qualities, is sometimes sadly at fault. Here, for instance, was magnificence, a bird of regal splendor, and yet voicing noble passion—with what? *Hee-gobble—hobble—gobble!* Never mind; the demure inspiration of this obligato knew no better, and perchance would have turned a deaf and heedless ear to the swelling melody of the nightingale or the sweet, melancholy pipe of a wood-thrush. *Hee—gobble—hobble—gobble* was as sweet to her as any other note might be to maiden first wooed by tender lays. Plainly speaking, it's only the system that counts, and here *hee-gobble-hobble* was *it*. So nearer came the gobbler, tuning his lay of love, and though the charmer feigned a great indifference, pecking at the leaves and scratching them aft in a cloud, she could not restrain or resist the advance, and nearer and nearer the bold one drew. *Tutt—tutt!* said he. *Putt—clutt!* she answered, giving encouragement. Raising his sinuous crest, he bustled sideways toward her, and accordingly she squatted in the dust. *Putt!* With an eager movement his head launched forward, and the hen squawked as his beak descended upon her naked poll with force enough, almost, to drive in her tender brains. But nevertheless she made no move to escape; victory was his. *Putt!* the descending blow fell upon her writhing neck; the conquest was accomplished. She was his.

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A savage instinct—yes. Much like the human savage who woos his bride with a club—a system, merely a system. Away to the deeper forest now, far away from the farmyard birthplace, and behind; only the restraint of civilization exchanged for forest love and liberty.

They walked the forest glades or journeyed into the clearings. He led, and she and his other wives trailed behind. But ere long she found the dream was short. Like other majesties, this one had all the selfishness of the kind. There was a tid-bit—a fat morsel—a grub or a swelling kernel. *Putt-putt!* the gobbler clucked, and again and again the hens ran up to share in the dainty. But—*putt—gobble*—he wolfed it down himself, and the *putt-putt*, it seemed, was no invitation to the feast, but merely his exultation at the find. So, too, at times, when one of his wives or another had clucked too long over some morsel haply found by herself, a long and snaky neck reached out, and the dainty was snatched from sight. How long was this to last? Not long. One by one the four wild hens sneaked aside, and in hidden nooks laid their eggs between branching tree-roots or in the shelter under some fallen log. Last of all was the demure brown creature from the farm-lands. Perhaps her heart was breaking—who knows?—for his greed and cruelty grew upon her. Nearly always he ignored her presence, carelessly; he seized upon her food, and, like a dog in a manger, was aroused only when some other gobbler disputed his sway. Then his wattles grew a swollen red, his gobbling high-voiced and challenging. Feathers strewed the battle-ground after all these sanguinary combats; these feathered lords rushed together, struck with their heavy wings, and desperately seizing each other's skinny crowns, tweaked until they drew the blood. Then when the combat was done, and he by his weight and vigor had won, he strutted anew, once more simulating his first amorous courtship. At length she no longer felt even a passing interest in the demonstration, and while again he was raging against another gobbler, she fled and left him a lonely monarch, but nowise disturbed at her defection. Hardly had he beaten off the other, when, in answer to his vainglorious gobble, another hen yelped from the hill-top, coming to console him.

Back to the edge of the forest went the brown hen, alone and unattended. Place after place saw her; at length she settled upon a sunny hill-side, and in a deep thicket hid her nest. It was a simple home—nothing but a hollow scooped among the leaves—but so artfully concealed that one might have walked within a foot of it unaware of her treasure that lay so close beside. In time there were eight eggs—creamy-white and splotched with brown—lying among the leaves, and there she rested, encompassed by a hundred perils. Once a wandering coon shambled over the log under which she lay, and, sniffing eagerly, trailed about. But she lay still—so still that her heart beat a terrifying pulse in that silence—ready to wage a hopeless battle against the marauder, to strive and do for her own. But the night prowler made on, and she was safe. Again, a fox came slinking down the hill-side in the moonlight, dragging his bushy tail with a rustle across the leafy flooring. She heard him, and the soft footfalls of his cushioned pads struck—*trot—trot—trot*—each one a blow upon her heart. Nearer—nearer—so near he came—then he halted, crouching, so close that she could see his beady, evil eyes. In vain she flattened in her cover, spreading her wings to shield these blessed possessions, striving to hide with all her craft from the peering, malevolent gaze set upon her. Step by step—a sinuous shadow in that ghostly half-gloom—the fox drew toward her; there was a swift rush across the leaves, a crackling of brush, and the destroyer had hurled himself against her stronghold. Leaping from the place, she took a half-dozen running steps, and, soaring into flight, went blundering away through the trees. A half-hour passed ere she dared return. Then she found two of the eggs destroyed under the foot of the enemy, and the others rapidly losing their warmth—that spark of fire she had so long sought to instill from her own feverish breath. But the fox no longer disturbed her; it was spring, and he wandered far, and when again he returned she no longer feared his cunning.

There were other perils, though, that beset her simple household. Days later, when she had left the nest for a moment's food, a sense of evil oppressed, and she hurried homeward. There were her fears confirmed, and but for her haste might, indeed, have been far worse. Something fled

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as she drew near—a small, red form leaping the log and scampering across the bark, scratching upward in impetuous haste. She saw it at a glance—a red squirrel—a chattering, remorseless thief, a noisy murderer. The nest was robbed; two more of the eggs were gone, and from the tree-top the miscreant jibed and jeered, buzzing taunts at her while she settled hopelessly again over her four remaining treasures. With added care and watchfulness, barely daring to leave the nest, she grew gaunt and overwhelmed with terror's torments. A wind stirring the tree-tops or raking along the leafy carpet filled her with anguished dismay; a breaking twig set her heart to beating wildly. Where now were the vaunted privileges of freedom? Much better the lean farmyard and the fields, and the protection that man gives to his own. So passed the days, till at length she felt the awakening lives stirring beneath her.

They came from the shell one by one, cheeping as they forced through their armored covering—four fuzzy, scrambling chicks, scarcely able to stand, and clamoring to be fed. But instinct was there, and with it enough safety to let the mother forage anew; for at a cluck—a *puttt* of warning—they buried themselves among the leaves, hidden from all but the most patient, searching eye. Cunning was their first impulse; a hole hardly big enough to hold them was a safe haven from almost any foe, and in the close coverts no hawk was ever hatched that could stoop quick enough to reach them once they saw him coming.

For many weeks they kept to the ground, for strength, as yet, had not taught them flight. In these days they ranged near the nesting-ground, squatting at the first alarm, and with eager, beady eyes looking everywhere for the danger. Or at a note from the mother hen, they crouched beneath her guarding wing, and, once there, could safely defy all the lesser hawks, and some of the four-footed marauders, too. But this security in no way remitted the least bit of her fear or watchfulness, and the sweetness of mother love, that, no doubt, comes to every living thing of the woods, was a sweetness largely alloyed with agony and unrest.

Time passed; their strength grew, and one day she led her brood into the first of the fields. The sun, then, still hid beneath the trees, but a dull glow had betokened his rising, and dawn was close at hand. So through the dewy grass they went, regardless of the wet that would have brought to an untimely end more delicate chicks of the farmyard, and in the edge of the opening the brood foraged widely. *Putt*—here was a swelling grain; *putt*—here a fat ant, a grub, or a tender blade of green. At each call the chicks came bundling forward, and between times looked out for themselves. The light grew; it was day. The air settled, soft and warm; they ranged wider. Watching, ever wakeful, fear her first instinct, and dread ever in her heart, the old bird kept guard, at every step turning her eyes in all directions. Disaster might fall out of the clear skies, or dart, unheralded, from the neighboring copse. Or, again, a writhing, sinuous band of black—a snake—squirmed along the neighboring furrow; and in dire terror she fled, followed by her broodlings. Peril was everywhere—on every side—in the heavens above, on the earth below. But food is the first principle of life, and to live, the wild things, even in mortal terror, must feed. So harried from one covert to another, they worked along the forest edge, and the sun rose high above the trees.

Who could see the light shadow that fell across the earth, swooping from over the trees swiftly into the clearing? It came, an emblem of destruction, hovering for an instant; then it marked its prey, and stooped. The mother hen saw it, poised for the rushing stoop, called, and a trio of fluffy bodies nestled beneath her wing. But the fourth—too far away—looked upward, saw the bolt falling out of the blue, and, palsied with fear, crouched on its nerveless little legs. Yet while that falling form was still in mid-air, instinct nerved it, and with a blind, mad exertion it ran falling and blundering toward that protective haven. A flip of a distended wing—a swift, astonishing flight—a sudden turn; the air *rustled* as the hawk swerved, and the tragedy was done. One frightened, appealing note, a small voice of terror, and away, upward, went the murderer, flapping with heavy flight toward its aerie in a tree-top.

They fled, the survivors hiding in the darkest thicket of the wood. No need to stay and look longer upon the tragic scene, the trail of feathers that flew listlessly drifting down the gentle breeze. Away from it—away from that orgie of nature—that life that lives in death. Over-

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whelmed they crouched, quivering, in their forest haunt, mad with fresh terror each time the wind swept rushing through the tops. From there they heard the hawk's shrill whistle, and his shadow fell across their hiding-place as he swooped wheeling over the trees. Three, now, were left; and for them—what? A moment's respite, perhaps, and after that——

Day waned, and as the shadows trooped across the woodland, they perched among the trees. But even here the mother's fear felt no rest; she hid her head beneath her wing in quest of sleep, awakening fitfully at every sound in the darkling wood. So, beset on every side, the little brood sought safety in numbers, and in one of the big bottoms joined the other flock. But even here there could be no peace, for the brown creature found that her one-time gallant was, after all, little better than a braggart boor, an overmastering, self-centred creature of selfish purpose. Whenever a hen clucked to the fledglings, calling them to the feast, he darted in at an eager run, snatching the morsel and masterfully trampling the chicks whenever they came into his way. Thus the spring passed on, summer came, and the young birds essayed their first cumbersome flight. They learned that *putt—putt* is a warning if pitched in a certain key, and whenever the note gave warning, they spared no time to look about—to try what way the danger came—but with a short, swift run, leaped into the air, and went soaring off among the trees. Yet even this accomplishment could not master the dangers of the earth, and another tragedy befell. The early morning passed, and the flock, straggling in from the sandy river-bottom, had just reached the edge of the woods. Easy and confident, the three young ones straggled through the thickets, disregarding the old hen's querulous, anxious complaint. Why, indeed, should they forever keep beneath her wing when here was the whole forest before them—a world to prospect and discover, stored with rich treasure of delicacies? *Cheep!* Here was an ant-hill brimming with fat white grubs —*cheep!*—a forgotten grain, ripe to bursting. Regardless of the distracted hen, they ran in all directions, and— *Putt! Putt!* There was no mistaking that note, a clarion of alarm. *Putt!* With one impulse the whole flock leaped into a run, the silence broke with a thundering of wings, and away through the openings soared the affrighted birds, all but one—one of the three. The destroyer had him—a mangy dog-fox, prowling homeward after an eventless night among the farmyards far across the fields. He stood now, his forefeet planted on the quivering quarry, and his fangs gripping its writhing neck. So it struggled—once—and was still; and the dog-fox, twisting it across his shoulder, leaped homeward to his earth in the hollow of the neighboring hill. Two now were all that were left, and the mother hen, lighting on a ridge, yelped again and again until they found her, and came running forward, eager for the protection of her encircling wing.

The dire lesson was not without its result. For days afterward the two survivors kept closely to the flock, avoiding the fallen logs and hollows that might hold some lurking foe. And thus they grew, their beady eyes forever on the watch, suspicion in every movement, and a shy, crafty method in the way they crept about the woodland.

Now there was a change. The first leaves of the hard-wood were touched by the autumn paint; the persimmons were ripening on the trees, and the locust had ceased his busy intonation, silenced by a killing night-frost. Confidence came to the two young birds, and they too began to strut and to take on airs, self-reliant in craft, and ready and willing to care for themselves. They strolled up from the bottoms, and, ranging along the ridges, gorged on the fat harvest of the season. There were nuts of every kind, and falling seed; their crops grew heavy, their wattles glistened, and a glorious sheen displayed itself upon their plumage. Like all the other forest creatures, they were enlivened, invigorated by the first sharp airs out of the north. Widely they tracked the ridges, with their strength daunting every four-footed marauder that tried to take them on the flank.

But there was one other enemy upon whom they had not reckoned yet. They had just crossed to a neighboring ridge, and were scattered, feeding upon the ground-nuts, when a warning *putt—puttt!* sounded the alarm. Then there were a rush of wings, a rustle, and a cloud of flying leaves; after that, a crash that shook the forest and went banging away in echoes upon the riven air. In mid-flight the old gobbler collapsed, pitched forward, and struck upon his back,

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stone-dead. Crash! Again the gun roared, and this time the searching lead found its billet in one of the growing pair. He felt the shot strike deeply—a mortal wound—yet spreading his wings fixedly, he sailed on, and, landing lightly, ran at full speed into the deepest thickets of the swamp. Weakness overtook him there, and he died; and that night a scavenging raccoon found a fat meal awaiting him in his chosen runway.

Vainly the mother hen yelped, and again upon a hill-top, calling for her young. Terror-stricken, the survivor had branched off among the trees, and at nightfall another flock had answered to his yelp. So he, too, was gone, and the brown hen, unheeded and unheard, at last wandered on, joining the other hens at the nightly roost.

Then fell the snow. It came first in clotted flakes, wet and clinging, turning later to powdery crystals. All night the storm held, and when the morning sun broke through a rift, the flock clung to its perch, garbed with white. But hunger pressed, and they foraged along the bottoms, scratching for the food that lay beneath the covering. It was scant provender at the best, and they wandered far, and in their wandering left behind a broad trail that told its story only too plainly to the hunter that came creeping through the brush.

The tracks led across the bottom and around the shoulder of a hill. With eager eye he scanned the trail, marking its numbered tracks. Now he held his gun forward and stole along, scanning the open vistas before him. His prey was near, and he knew it. Straggling along, the flock made its way about the hill, unguarded and unsuspicious. But as they turned around a knoll, a sudden rustle in the brush, a black form moving swiftly from behind a tree caught the alarmed gaze of the brown hen. *Putt—putt—puttt!* She gave the alarm. Once more there was a flurry of wings; they beat their way with a rattle of dead branches through the trees, and again the forest roared with that dread thunder. Crash! Still again. The brown hen felt her wing give beneath her; she dropped, turning over, and then scrambling to her feet, she pointed for the nearest thicket and ran, quivering with mortal terror. Dodging here and there, fleeing; driven on by heavy footfalls and a smashing of the brush, she ran as she had never run before. Well she knew that destruction was on her trail, and a backward glance showed her the man in full pursuit. But in his eagerness he forgot he had a gun, and pursued, with hand outstretched. He was close now, very close—so near she could hear him panting with exertion. His hand outstretched to grasp her, and she swerved. The next moment she had dodged into an impenetrable tangle, and with head down, plied among the interlacing branches, while the man behind fought vainly with the brambles, cursing his stupidity, and too late chancing a snap-shot as she crossed far away in the opening. At last she dropped into a walk, painfully dragging her drooping, broken wing. Sharp twinges like fire racked her, and perforce she halted, resting upon the snow. But the rest was short. A sound in the brush startled her anew; there was the man tracing out her track, following, still intent to slay. Onward the hunted creature took her way; again she stopped to rest. An hour passed; her wing had stiffened till every movement was an agony. So behind a log she squatted, watching on every side for danger, alarmed by every sound in the whispering wood.

Ye-onk! Ye-onk! A yelp sounded near at hand. She lay still, listening. *Ye-onk—ye-onk*—again! Somewhere from in the distance it was answered, so she too gave the call. *Ye-onk—ye-onk!* The sharp note pierced the silence anew, and she arose, listening, while the other turkey answered. But surely there was no peril here. She stepped forward, and slowly, cautiously, and in pain she limped along. The other bird had drawn nearer; at regular intervals the yelping on the hill-top tolled them on. *Ye-onk—ye-onk!* The other bird was very close. She leaned down, peering through the tangle, and there on the knoll stood a gobbler, almost grown. The sun shone full upon him; his plumage glistened, and for a moment he strutted gayly, puffed out and proudly conscious. *Ye-onk!* yelped the wounded bird—*ye-onk!* It was the fledgling of the spring, now grown to a magnificent. *Ye-onk!* she yelped again; then close at hand something rose from behind a windfall. She gave one glance, and, terrified, halted in her track. *Putt! Putt!* A wild alarm. *Putt!* The gobbler heard. He dropped his head, clapped his wings closely to his side, and ran. Crash! A cloud of blue smoke poured down the hill-side, min-

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gling with a drift of feathers that sailed listlessly along the quiet air. Crash! bang! Again that dread-inspiring sound. Destruction was there, and the mother bird fled the place. On and on she went, the forest echoing with the exultant whoop of the hunter, a cry of joy that mocked her terror and distress. She kept the way with unimpeded haste until night drew down upon the wild. Yet even darkness bore its terrors to her frantic breast. Impeded by her broken wing, she could not roost upon the trees. Instead, she crouched in a hollow between two roots, and with wakeful eyes searched the darkness for every known foe. There the first light of the moon found her; and by its light she made out a slinking form stealing with velvet pads across the forest floor. *Sniff!* It paused. She saw it peer about; its gaze was fixed upon her. Vainly she crouched lower; she saw it stealing nearer. A sudden flurry of leaves—a leap—an outstretched form hurling through the air! With every nerve aflame, she sprang from her bed; another effort, and she had found sanctuary upon a low-lying limb. Below, the baffled fox mawed a mouthful of feathers, whining as he circled all about. Weariness overwhelmed her, but still she clung to her perch. She watched and waited, and below, death squatted upon its haunches, waiting. Overhead the moon beamed in all its glory, and a myriad stars brightened the velvet sky. Peace was in the sky, peace in the air, and the solemn stillness of the woods. Yet underneath lurked death, patient and resolved, scenting with that strange faculty of a beast of prey the presence of a wounded quarry. So squatting he awaited, and the bird, her wound burning with awakened vigor, felt her grasp relaxing. Once she swayed perilously, and the dark form beneath arose and stood with gaping, fang-distended jaws. *Yap!* He barked shrilly, and the hill answered, repeating the terror to her ears. She swayed forward, saved herself, lurched dizzily, and fell.

THE CHRISTENING OF CORINNA.

By Katharine Holland Brown.

"YOU see, madame, Élise, my wife, she is *bon Catholique*, like me; but her moder, mine *belle-mère*, she is leave the Church for to marry her secon' hosban', what is heretic, an' ver' queer person. Oh, he's good 'nuff man, I know dat; he steer straight, an' he walk straight, an' he kind as Père Antoine; but all you need is say 'Mass' to 'im, if you want see him boil over like a milk soup. He is call hese'f Baptees, an' he say nobody is go to paradis' 'less he is souze' in the lake, 'stead of christen' at the altar. *Bien*, madame, I tell 'im we's all souze' twenty time a day, in the storm season; an' we's christen' besides, so we's twice sure of paradis'; but when I say that, he is roll up he eyes, an' tell me I so *imbécile* I should be shame' to breave those word' 'bout what I can't understand. So after that I is keep still; but I tink, 'Dey is one good ting, I is too big for him to souze me.'

"He is build him a lil' church, 'bout big as the dryin' shed, an' it has'n' no cross nor altar nor nossing; nossing 'tall but some steps, where he stand to preach, an' a tub wis three flannel curtain' hang up 'round it, for to baptise when the lake too col'. All the people like him 'cause he is such a nize man, an' they go listen to him, ver' often; an' he an' Père Antoine, they is good friend', though I know Père Antoine is cross hese'f ev' time that heretic is pass by. *Ma belle-mère*, she is hol' her head 'way up, 'cause she is make so good marriage in her ole age; an' ev'ting is go smoove till Krin is born.

"It is two day' before St. John's Eve when he is arrive'; Père Antoine is gone to the Mainland for make a fun'l that same morning. 'Long that afternoon the clouds is pile up purple an' thick, an' the lake turn white as frost, an' the wind roar like it's heart of winter. Nobody can cross in such storm; it will be eight day' before any canoe dare put out in it. On St. John's Eve, I come into the room, an' Élise is cry, ver' quiet, by herse'f. I make her tell me what's wrong, an' she say, 'To-morrow is the blessed day of St. Jean, an' that beby t'ree day' old, an' ain' christen'

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yet. What sort luck do you s'pose he is goin' have?'

"I try to make her stop, but she jus' cry harder. She say she know Père Antoine ain' goin' get back 'fore nex' week, an' it break her heart if her pore lil' beby mus' go all that time wisout bein' bless'; an' s'pose he is die before *baptême*—she is put her face on my arm an' she sob there till—Oh, *bien*, madame, I ain' shame' for to say I is cry too, louder 'n' she is; we sit there sniff like two scare' chil'en. Prett' soon in come *ma belle-mère*.

"'What is trouble wis you two *imbécile'?*' she say. 'Here you is have you house an' you' boats an' the nizes' beby anybody is ev' see, an' you is whine like you's been slap' an' send to bed. You is bofe get slap good, if you wakes up dat beby.'

"'Oh, my pore lil' beby!' Élise say. 'There isn't nobody for to make the *baptême!*'

"*Ma belle-mère*, she turn white's the lake. 'It is true, he mus' be baptise',' she say. 'If he go through St. Jean Day wis no name, he is *un misérable*, always; they is Petaire Drouet, what is drown' on his birfday, for that he ain' nev' baptise' till he is of age eight day'; an' Marie Seguin, she is mos' two week' old 'fore she get her name, an' she ain' nev' have no sense, 'tall; an' Jawnny Perroche—Ah! but they is one way for fix it!' An' she lean down an' kiss us bofe. 'Mine hosban,' he will make all well! To-morrow will we have thees beby christen' of him, in he own church!'

"Élise an' me, we is look at each ozer, an' our tong' is rattle 'gainst our teefs.

"'Yes,' she's say. 'That is one beau'ful plan. The blessed St. Jean, he is also Baptis', like to my hosban', *précisément*, is it not so? That beby, he shall have all the luck he kin carry. I go tell him now, an' we is see all the people, an' make ev'thing ready. Oh, they's goin' talk 'bout thees *baptême* till nex' St. Jean's!' An' she snatch up her shawl an' run 'way to her own cabin.

"Then Élise, she begin cry in earnest. 'I won' have 'im drop in that col' lake! I won' have him put in that slippy ole tub! Oh, my pore lil' beby! They's goin' shut him out of paradis' firs' an' then freeze him afterwards! Oh! my pore lil' beby!'

"I sit there an' bite my fingers till I's mos' 'stracted. 'We mus' let you' new fazzer make the christen',' I tell her. 'You' moder, she hate us for *tousjour'* if we do anysing else; an' he is ver' kind man; he won't do nossing for hurt you' beby.'

"'But I want him like to me, *entièrement!*' Élise cry. 'I don' want my beby goin' one road an' me anozzer! These Baptees, they speak ver' smoove, an' they act ver' nize, but they isn't have no *purgatoire;* he is tole me so hese'f. An' if they ain' no *purgatoire*, how is I know but they isn't have no paradis', neither? Nossir, I ain' goin' stand it! But oh! *ma mère*, she won' nev' forgive me—an' my pore lil' beby!'

"Prett' soon the beby is wake up, an' he begin cry, too. Then I tink I's crazy, sure.

"'I is goin' take 'im up to the Fort, an' see what M'sieu say 'bout it,' I tell her. 'An' if he tink it is all right, then to-morrow we is have that christen'. An' if he say it is wrong, I is take thees beby an' swim wis him to Fazzer Antoine. I ain' goin' have he luck spoil' for hever.'

"*Bien*, Élise she stop cryin', for she tink what M'sieu say' is alway' right; an' I roll the beby in a lil' bunnle, an' climb the hill to the Fort. It is high wind an' white moon, an' the lake come thunder up on the beach like snow. Madame's garden is so full of roses it mos' take you's breff, an' the branches stick cross'n' all the paths, that you mus' go ver' slow. As I turn one corner, I hear voices, an' I know it's yo'ng M'sieu Robert Courtenay, which is home from the war, an' Miss Hilda, what is come visit the Fort. I is see them together ev' day; they's ver' good friend'. But this time they ain' talk so ver' friendly.

"'So you mean these for final?' say Captain Robert, ver' low. Mamselle Hilda, she ain' say nossing.

"'I ain' expec' it,' he go on. 'You let me talk wis you hours together, an' you treat me that gentle—'

"'It is because you is wound',' she say then.

"'On'y for that? So when my head is injure', you can give of sympathy; when it is my heart which suffer, you give nossing but contempt.'

"'You isn't have no right to speak like that,' she tell 'im; an' I know by the way her voice crink up, she's goin' cry right 'way, if he ain' comfort her, ver' quick. *Vraiment*, madame, it was ver' interessing. He star' to say somesing more, an' I is listen hard's I kin, when all at once that beby begin screech like he's bein' keel.

"Miss Hilda, she is give a lil' squeal, an' M'sieu Robert, he say somesing down he t'roat, a' then they come push through the bushes to me. Miss Hilda is snatch the beby out of my arms, an' it is stop cry' quick's she take it. *Bien*, madame, maybe I is hol' topside down; I do the bes' I know how. M'sieu Robert, he don' say one word; he grab my shoulder an' walk me into clear moonlight.

"'Now, you long-ear' scamp,' he say, 'you tell me why you is listen roun' here or you goes to the stone house. Mos' like you gets there anyhow.'

"'I want to see M'sieu le Commandant,' I say.

"'M'sieu le Commandant is go to St. Ignace t'ree day ago. I am in his place. Speak up now!'

"*Bien*, madame, I tell him the trut', ev' word; how we is bofe *Catholique*, an' we don' want no Baptees beby, an' yet we don' want make my *belle-mère* angry, neither; I ain' leave out one word. An' Miss Hilda, she sit down on the step, an' hol' the beby, an' she shake like she's have a chill.

"'We's got to help you out of thees trouble,' say M'sieu Robert, ver' solemn. '*Vraiment*, thees beby mus' be christen', an' I tink I know a way. They's a priest visit here now, one which in Pisque Palian. He ain' *bon Catholique*, to be sure, but yet is he not Baptees, neither. He is good friend of Père Antoine, an' you better let him put it through.'

"'But if I goes to these strange pries', *ma belle-mère* an' her hosban', they is hate me *tousjour*,' I say. 'They tink I is sneak off wis my beby, purpose for spite them.'

"'They's on'y one ting we kin do, an' that is, christen these beby without that you consent,' M'sieu say. 'Miss Hilda, she will be godmoder an' I will be godfader. We take the beby 'way from you into the house for baptise it, an' you is watch through the window, but not come in. Then we give it back, an' you is take it home an' tell them that we did it by force, an' you can't help you'se'f.'

"'That's the on'y way, Michel,' Miss Hilda say. 'No, you can't have you's beby again, 'tall, not till it is baptise'.' An' she runs away wis it into the house, to Madame Courtenay.

"*Bien*, M'sieu Robert, he bring out that Pisque Palian, an' we is talk togedder. These priest, he scold us bofe, an' he say he ain' goin' has nossing to do wis any such blaspheme'; but M'sieu Robert, he keep on coax', an' I see that pries' he is stan' firs' on one foot, then on de ozer, an' when a man ain' sure 'nough of heself to stand on bofe foots, I know they's hope. Prett' soon he say, 'Well, if the fader an' moder

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are agreed, an' you people is put it in countenance, I don' see what else I kin do.' An' M'sieu Robert, he turn roun' an' call, ver' soft, 'Hilda!'

"Madame, it is mos' forty year gone, but I kin see her in the moonlight, clear as I see you. She is slim an' straight as a yo'ng birch, an' her white dress is all lil' shelfs, swung out like a big mornin' gloire; it come down those step, lippity, lippity, lippity, like the lake whisper at sundown. She is stick a rose in her black hair, an' she laugh up at us, shy's a bride.

"'We's all ready,' she tell me. She is wrap the beby in a big piece of lace, fine as witches' thread. 'Now, Michel, remember, your beby is goin' be christen wisout you's consent. You kin try break it off, if you like, but it ain' goin' do no good.' An' she runned back into the house, wis the two men close behin'.

"I is climb up on the sill outside, an' watch it all. *Bien*, madame, that Pisque Palian may be heretic, but he is ver' good priest. Firs', he is make a prayer, an' then he is read from a lil' book; an' then he say, 'Name thees child.'

"Miss Hilda, she look at me like she's frighten' an' I nod my head hard, that any name she choose is all right. She look at me ver' serious a minute, then she say—*Mon Dieu*, madame, what you tink she say? 'I wish to give this child my own name, Hildegarde Corinna!'

"Madame, I sit right back, bump! into the gate. Hildegarde Corinna! An' there she is a boy!

"They isn't nossing I kin do. By time I is crawl back to the window, it is all done, *complètment*, an' my pore lil' son is tie' up to that girl-name, *pour tousjour'*. They is all grab the beby, an' kiss 'im, an' Miss Hilda, she kiss 'im too, an' her cheeks red as her rose. Then she put the blanket roun' him again, an' she bringed him out on the porch. She put the beby in my arms, an' kiss 'im some more. Her eyes is all full of tears, wis the laugh sparkle through.

"'We've done our best for her, Michel,' she say. 'She is the firs' namesake I is ev' have.'

"'*Mercí*, madame,' I tell her. 'I am indeed grateful; mine son, Hildegarde Corinna, he shall grow up to honor you, an' the name w'ich you is give him.'

"Madame, she is look at me like I's struck her. 'Michel! You mean it?' she cry out, an' she try grab my arm. M'sieu Robert, he jus' give one yell, an' he fall up 'gainst the porch; an' me—oh! I know Élise is want to see me, dreffle bad, an' I know it is goin' take too much time for explain; so I is stick that beby under my arm, an' run fas' as my legs kin go.

"Élise, she's awake, an' when I tell her that beby is christen' an' it isn't no Baptees' beby neither, she is dat glad she have to cry a lil' bit more for prove it. Prett' soon *ma belle-mère* she is come in, an' begin scold.

"'What for is you keep that beby 'wake so long?' she say, an' she pull 'im out of my lap, an' begin undress 'im. 'Why, Michel, where is you buy these lil' shoes?'

"'Madame Courtenay, she is give 'um to me,' I say. I isn't see them 'tall till that minute.

"'They is 'way too big for 'im,' *ma belle-mère* say. An' she pull one off. Then her mouf drop open wis a snap.

"'What's this?' an' she run her finger in that lil' shoe, an' pull out a piece of gold.

"'That's for buy Corinna's wedding cloes,' I say. But my eyes is mos' fall out of my head, too.

"She pull off the ozer shoe.

"'An' what's this, Michel?' It is anozer gold piece.

"'That is her dot,' I tole her.

"'An—*Mon Dieu!* Where's you steal this lace, Michel?'

"'That is for her veil of bridal,' I say. An' then, madame, I can't hol' in no longer. I laugh till I mos' die, an' those two womens, they tease me prett' near crazy to fin' out what I is lie 'bout this time. At las' I is get my breff, an' tell.

"*Bien*, madame, *ma belle-mère*, she ain' so mad as you is goin' tink. 'You is punish enough that you' firs' boy is carry roun' a girl' name,' she say. An' she go on nex' day an' prepare like nossing happen'; she make a big feas', an' ask all the Fort people, an' then we dance—ah! they ain' stop talkin' 'bout it till those las' twins is christen'.

"Mos' five year ago I is down at the pier, an' 'long come a ver' ole lady, wis hair all white, an' shoulders straight's a mast. She is have on a white dress, an' roses in her bonnet, an' her eyes flash like stars. I didn't tink I is ev' see her before, but they's a yo'ng lady by her side what look jus' like Miss Hilda, 'cept-in' her hair; that is red like yo'ng M'sieu Robert's use' be.

"'Give you greeting, Michel,' she say. 'No, you needn't salute you' old friends, if you don' want to; but I would like to know somesing 'bout you' family. Are there others beside my namesake?'

"'Madame, they's sev'ral,' I say, an' I bow ver' low. 'They is Hildegarde Corinna, what we call Krin, for save the time, he my oldes' son; an' then they's Hortense an' Lucien an' four twins, that make seven; an' Pierre an' Stasie an' Edouard an' Honoré. Eleven, madame.'

"'And are they all marry, Michel?'

"'Not yet,' I tell her. 'Not yet; but the t'ree oldes' is goin' be.'

"'Eh, *bien*, Michel,' she say, an' her eyes dance full of sparkles as the Wishing Spring. 'That is truly remarkable; but I is beat you on one count. I is gran'moder.'"

HOW TO MAKE MONEY.

SUGGESTIONS FOR UNTRAINED WOMEN WHO WISH TO MAKE A LIVING OR ADD TO THEIR INCOME BY WORK AT HOME.

EVERYBODY'S MAGAZINE proposes to print, from now on, all the *practical* suggestions possible for women who wish to make money by home-work. The "business woman" has innumerable avenues open to her nowadays, but thousands of unskilled workers, often with domestic cares, are utterly unable to find a market for what they might make were they but shown how to go about it. An announcement of prizes for the best ideas along this line will be found among the advertisements. *Women who wish to enter the contests, but are unable to subscribe to the magazine, may compete by securing three new subscriptions.* The Editors will be glad to hear from any one contemplating a trial of the suggestions published in this department.

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THE BACHELOR'S FRIEND.

By Katharine Newbold Birdsall.

"I'D like to know how you discovered I was coming," said the polite Bachelor.

"I heard you," said the hostess' Younger Sister, glancing laughingly at his feet.

"I never was quieter in my life," he declared as he reluctantly stopped shaking hands. "Oh—I suppose you mean my new foot-gear? They're quite—er—quite—versatile, aren't they?"

"They are," she answered, shivering. "Would you mind asking your sister to purchase your next ones—especially if you are coming to see us?"

"They're not my own choice," he admitted, putting out his foot, and showing, above his tan ties, an expanse of bright-red stocking with large white dots. "The fact is I suddenly discovered that everything else was in rags—utter and absolute—and this was the only pair I could get in the little hole of a village across the lake."

"In camp is the only place I could forgive you for wearing them," said the Younger Sister.

"It is *not my fault*," said the Bachelor complainingly. "It is the fault of some woman——"

"Always the woman," murmured the Younger Sister.

The Bachelor took no notice of the remark, but continued: "It is the fault of some woman who is absolutely in need of work and yet is either too proud or too timid to go into a business that is really a charity also."

"What is that?" she asked.

"Bachelors' mending. I know it is not an entirely new suggestion, but it is a much needed one in our cities. I have never been able to find a woman of any ability who had a desire to do such work. There may be some, but they don't make themselves known to us. We have an old crone down at the club who does our washing, and throws the mending in for an additional consideration. But such mending! My socks are darned in bas-relief. I would pay a good sum a week for having my clothes properly mended 'as mother used to mend them,' and there are at least twenty other fellows in the club who would also."

"Perhaps your club is an exception," suggested the Younger Sister thoughtfully.

"No, it is not. I know at least fifty other men in the same predicament, and I have heard them discuss the woes of many others. Now, some bright woman could make a good income—a number of them in the large cities—by mending bachelors' clothes once a week, or by having them mended."

"I thought women were not permitted to enter clubs and bachelor apartments," said the Younger Sister.

"That is true in some cases," said the Bachelor. "But it is not necessary for a woman herself to go. She could hire small boys to bring and deliver the clothes, and women to do the mending under her supervision if she did not want to do it herself. Why, it is a beautiful field for work! I've been a bachelor for some time——"

"*Many* years," suggested the Younger Sister dimpling.

"I'm not so old, either," he objected. "Well, never mind. I'm not so young as some people, I'll confess. I've lived at the club for years, and not once have I heard of a competent 'bachelor's friend.' Why some clever women don't do it, or if there are such 'friends' why they don't make themselves known, is more than I can see. Such a woman ought to have her business card in every bachelor apartment and club in the city. She ought to get on the right side of the steward or janitor, and send notices directed to lists of club members. There is room for many such a venture, and although there would undoubtedly be a deal of work about the first lot of mending taken in, as soon as clothes were once in order the work would be comparatively easy—and the benefit great to the bachelors and to their 'friend.' Men would be willing to subscribe in advance, I am sure, to get such an enterprise started."

"That is not a bad suggestion," commented the Younger Sister, "and if it will prevent such things as those"—glancing at his feet—"I shall start several when I get back to town. I know of some women who are anxious to earn their way. There is only one great objection," she added as she stopped on her way down the log steps.

"What?" he called after her.

"It might prevent—er—it might make the bachelors too comfortable and homey in bachelor quarters," she called over her shoulder.

SHOPPING CLASSES.

THIS suggestion refers to teaching girls the selection of clothing materials, from hooks and eyes to sealskin coats, and the getting of the best materials for the money spent. With valuable advice from "one who knows" and lucid explanations of reasons, many young girls will cease to spend their money in foolish finery and learn that "overdressed" does not mean "well dressed," and vice versa. A great many young girls are given a certain stipend monthly out of which to clothe themselves completely, or to buy the little accessories of dress. But in their inexperience they purchase things absolutely unsuited to their needs because mother is too busy with house cares or society to help her daughter spend—or is an invalid, or perhaps there is no mother at all. For a woman who combines a fondness for girls with good shopping ability this suggestion opens up a large field for profit, provided she lives in or near a town.

The teacher of a shopping class might be called a "shopping chaperone," and must be in readiness to take her charges at any time and superintend their purchases. If one organizes a jolly class in which the girls are good friends, the whole class can be called to attend the purchase of a frock for one of them, and so on. This idea is apt to lead to many calls for shopping from different quarters and the establishment of a profitable business.

THE POLISHER.

"YES, we came home the fifteenth of October," said the Young Housewife, as she ushered the caller into the attractive little parlor of her apartment, "and since then I have had eleven servants—the last one left yesterday—which is why I answer my own door bell." And she laughed merrily at her own expense. "To-morrow I am going to take back my faithful old Norah of years gone by—she has one great fault, but I shall have to meet that somehow."

"What is it?" asked the caller sympathetically.

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"She seems to find it utterly impossible to polish the silver and brasses, and I have to do them myself to save them from ruin. You know my wedding presents were very handsome—in quality and quantity. I hate to think of having them scratched, but it is foolish not to use them. There ought to be a reliable silver polishing company as well as a window washing one, for people with or without servants."

"That is an idea worthy of consideration," said the caller. "I know a little woman, a widow with a child who is just beginning school, and she is anxiously searching for some employment, while the child is busy, to eke out her very small income. She is a very good, careful housekeeper, and I believe could carry out that suggestion."

"She could certainly find many who would be glad to avail themselves of her services," agreed the Young Housewife. "I should, for one, like to employ her regularly—I'd rather make six beds than polish six spoons, I believe. She might clean brasses too; when one does it with old gloves on, the hands are saved from that horrid look and feeling the polishes give. If your friend is willing, I would gladly pay her seventy-five cents an hour—she might have two hours work a week here. If she could get other customers at that price, or even less, I should think it would pay her to try it. Most of it is 'sitting-down' work, too."

"I am convinced it is exactly what Mrs. Bereft can do, and will be glad to do," said the caller later, as she rang for the elevator. "You may look for a call from her this very afternoon, for I shall make the suggestion to her now on my way home."

HOW TO MAKE THE PASSE-PARTOUT THAT WILL SELL.

As a rule, it is only country women who think of saving broken window glass, and of cutting the pieces to fit some smaller window when necessary. Probably this is because a glazier in the country is a novelty, and the women have learned that if a window is to be paned, the quickest way is to do it one's self. It is not a hard thing to do, to putty a pane of glass in it's frame; the cutting of the pane to fit probably troubles the householder most. However, with a good glass cutter, a ruler, and a T-square, there is no reason why any woman should not become her own glazier by simply following the directions that accompany the glass cutter. I have had excellent results with what is called the "patent carbonized disk" (black diamond) cutter which may be bought for about forty cents. If one has a very steady hand and straight eye, glass may be cut without the aid of a ruler or square, but it is safer to have some straight, smooth surface to guide the cutter.

When one has mastered the art of glass cutting, the framing of pictures in passe-partout is comparatively simple. An artistic eye, steady hand, and neat fingers complete the natural ability needed to successfully carry on the work. Many pictures may be well framed without mats, which will save the trouble of cutting the mat board.

The necessary tools for passe-partout work are a good glass cutter, ruler, T-square, bottle of good liquid glue, a sharp pointed steel eraser, and a pair of scissors.

Every picture framed should have a cardboard backing, unless the picture is mounted on such heavy card that the addition of backing would make it too bulky. As it is necessary to glue the tapes that hold the brass hanging rings to the back of the picture, if one cannot get the patent fasteners, backing should never be omitted. The picture, if unmounted, should be glued to the backboard only at two corners, so there will be no danger of "gathering."

To mark the mat for cutting will require some mathematical precision in order that it may be cut exactly in the right place. Be careful not to make pencil marks where they will be seen.

The mat must be well bevelled in cutting, as it is hard to repair a poor cut. The piece to be cut out being marked, place the mat on a smooth board or thick cardboard, hold the sharp-pointed eraser firmly, in a perpendicular position, then slant the handle at an angle of about twenty-five degrees, and press hard on the knife as you draw it quickly down the pencil line. Do not try to use a ruler to guide your mat cutting as it is almost sure to slip—a straight, free-hand motion is easy to cultivate.

The glass, mat, and backboard should be exactly of a size in order to frame well. Place them carefully together before attempting to put the binding on, tying them together if necessary. The binding must always be glued to the glass side first, the other edge pulled smoothly over the edges of the glass, mat, and back, and neatly glued to the back. Corners of the binding may be either ended off square or cut slantwise.

As to binding, there are many materials that can be used to advantage, as the framer will discover for herself. The regular "passe-partout paper," which comes in little rolls already cut and its back gummed, is the most convenient. Book-cloth used for binding is extremely effective. A word about cutting it: do not try to cut it with scissors. With the aid of a ruler, mark a straight line on the back where it should be cut, and then with your sharp eraser cut the strips free-hand, or with the aid of a ruler if you find that method easier. There are also other materials which from time to time prove available—silks, wood-paper, etc. After the binding is dry, paste a smooth piece of brown paper over the back of the whole, the finish of any wooden-framed picture. Your work may be so neat that this last touch will not be needed. In most cases, however, it is needed to cover the attachment of the brass hanging rings.

Mat board and backing may be purchased of any picture dealer, or in quantities from wholesale dealers in the cities. Glass may be purchased in large sheets from a glazier and cut to size needed, even the small two-by-four-inch pieces often proving available for either tiny passe-partout or envelope frames. Passe-partout binding is sold by all stationers; pieces of book-cloth by binders; and various other materials will suggest themselves to any one who becomes interested in the work. Brass rings may be purchased at fancy, toy, or stationery stores, and narrow tape used to glue them fast (if patent picture rings are not procurable).

Last—and most important—your customers. For a woman without capital, the order system is the best. If you have not a Woman's Exchange to help you, get some store to display sample frames and distribute your cards; or better still, distribute your cards by mail if you can, to a few people who may be interested in your work. Orders will come, and if your work is *good*, you will be "advertised by your loving friends." Prices will, of course, have to be regulated by cost of materials.

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